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# PC/104 EMBEDDED-PC SOLUTION

- 386SX / 486SLC SBC
- 486SX/DX/DX 2 SBC
- RAM/FLASH/ROM Disk
- Super VGA
- PCMCIA IC Memory Drive
- 12-Bit DIO
- 5/10 Ch. Counter/Timer
- Dual Ch. RS-422/485



# PC/104 Embedded PC Control ...

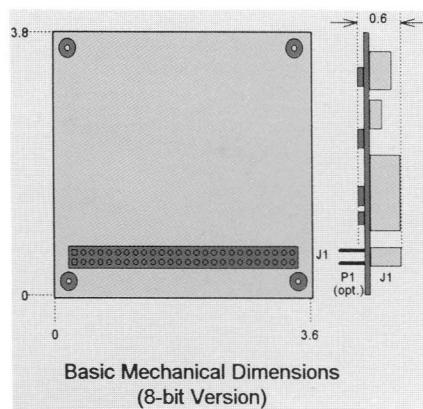
## PC/104 Embedded PC Standard

PC/104 was proposed as an extension to the IEEE-P996 (draft) specification and has been adopted as the "base document" for this new IEEE draft standard, call the *P996.1 standard for compact Embedded-PC Modules*. (The name "PC/104" comes from the total number of bus connector pins: 64 pins on P1, plus 40 pins on P2).

Products compatible with the PC/104 specification are already offered by dozens of companies. Therefore, like the IEEE-P996 PC bus specification itself, PC/104 is an expression of an existing "*de facto*" standard, rather than a theoretical bus developed by committee.

The key differences between PC/104 and standard IEEE-P996 (PC bus) devices are:

- Extremely small form-factor, 3.6 by 3.8 inches
- Unique self-stacking bus, which eliminates the cost and bulk of backplanes and card cages
- Reliable pin-and-socket bus connectors (64 and 40 pins)
- Relaxed bus drive requirement (6mA), which lowers power consumption (typically to 1-2 Watts per module) and reduces component count



## OEMs Supported

For the innovative modules, AXIOM would like to provide original equipment manufacturers (OEMs) with the industry's most compact, high quality, reliable, and cost effective embedded micro computer products. By using protested, high quality, embedded modules, OEMs can eliminate months of development time and greatly reduce development cost and risk.

## Total Solutions for Embedded System

AXIOM designs & manufactures a whole series of embedded systems computers and industrial I/O modules that support the PC/104 standard for OEM and industrial and laboratory applications. The AXIOM PC/104 product line includes the 386SX, 486SLC, 486SX, 486DX and 486DX2 SBC (single board computer); RAM/ROM/Flash disk, PCMCIA IC memory drive, SVGA module and eight data acquisition modules that provide A/D, D/A, DIO, Counter/Timer and RS-422/485.

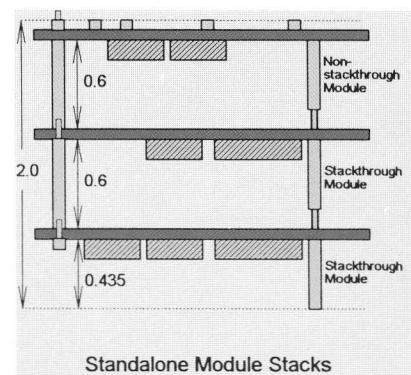
## Two Ways to Use PC/104 Modules

Although configuration and application possibilities with PC/104 modules are practically limitless, there are two basic ways they tend to be used in embedded system designs:

### • Standalone module stacks

PC/104 modules are self-stacking. In this approach, the modules are used like ultra-compact bus boards, but without needing backplanes or card cages. Stacked modules are spaced 0.6 inches apart.

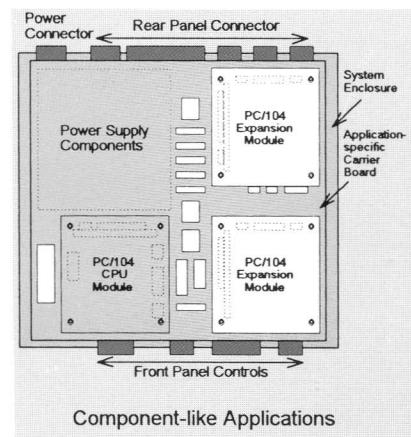
(The three-module measures just 3.6 by 3.8 by 2 inches.) Companies using PC/104 module stacks within their products frequently create one or more of their own application-specific PC/104 modules.



Standalone Module Stacks

### • Component-like applications

The modules function as highly integrated components, plugged into custom carrier boards which contain application-specific interfaces and logic. The modules' self-stacking bus can be useful for installing multiple modules in one location. This facilitates future product upgrades or options, and allows temporary addition of modules during system debug or test.



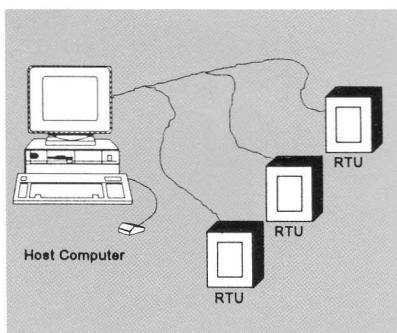
Component-like Applications

# ...for Integrated Remote Terminal Units

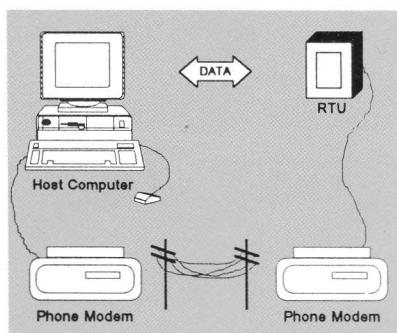
## PC/104 Application

PC/104 series give you the powerful process monitoring and control package for a broad range of remote data acquisition industrial control and local alarming applications. It offers flexible I/O module combinations and extended communication capabilities.

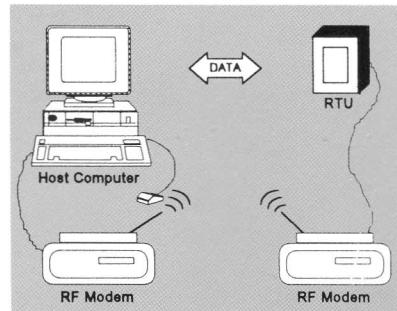
## Wireline Communication



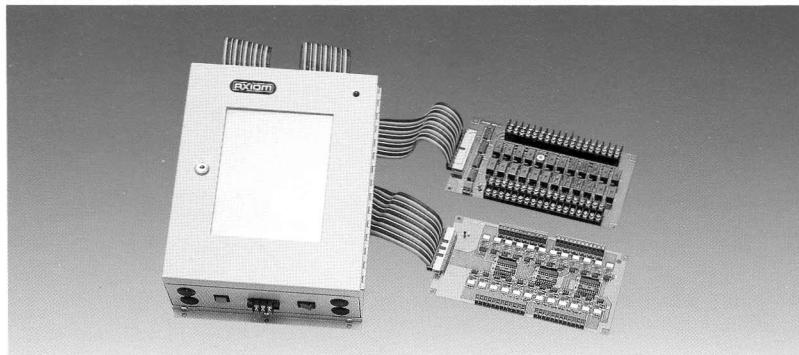
## Dial-up Telephone Communication



## Radio (RF) Communication



## Case A: Analog I/O RTU



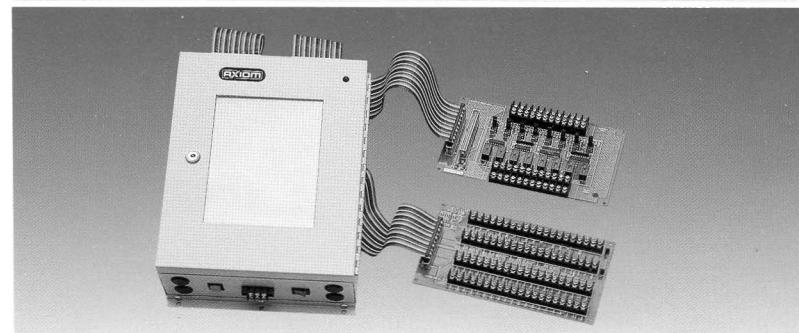
### Hardware

AX8025H	PC/AT386SX/486SLC All-in-one CPU Card
AX10435	Dual Drive Flash/EPROM /SRAM Disk Module
AX10410	High Speed Data Acquisition Module
AX10445	Isolated Dual Ch. RS422/485 Interface Module
AX750	General Purpose Terminal Panel
AX757	8 Ch. Relay Output & Opto-isolated D/I Panel

### Features

- 386SX/486SLC CPU
- Flash/RAM/ROM Disk
- 16 Ch. A/D, 2 Ch. D/A
- 8 Opto-isolated D/I
- 8 SP, DT relays
- 2 Ch. RS-422/485

## Case B: Digital I/O RTU

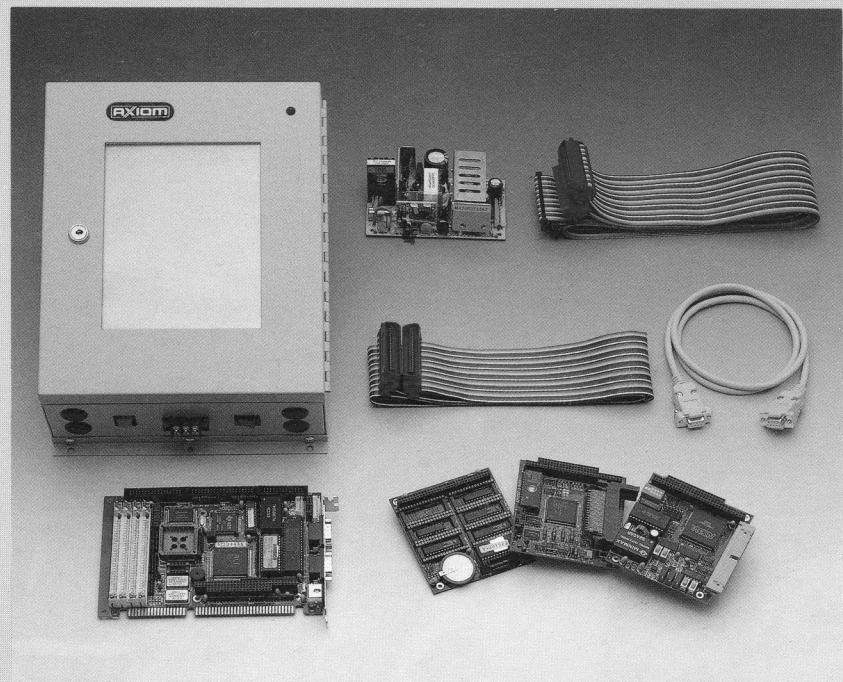


### Hardware

AX8025H	PC/AT386SX/486SLC All-in-one CPU Card
AX10435	Dual Drive Flash/EPROM /SRAM Disk Module
AX10420	48 Bit DIO Module
AX10445	Isolated Dual Ch. RS-422/485 Interface Module
AX754	24 Ch. Opto-isolated D/I Panel
AX756	24 Ch. Relay Actuator Panel

### Features

- 386SX/486SLC CPU
- Flash/RAM/ROM Disk
- 24 Opto-isolated D/I
- Input from 3VDC to 24VDC
- 24 SP, DT relays
- 125VAC/2A max. Contact Rating
- 2 Ch. RS-422/485



## Ordering Guide

- AH-WMK  
Wall Mount Kit

Including:

- Two 10-pin flat cable connector to 9-pin D-type female cable connectors
- Two 50-pin flat cable connector to 50-pin centronic female cable connectors
- One 25-pin flat cable connector to 25-pin centronic female cable connector

### Optional Accessories

- AP-60W  
60 Watts Power Supply with Power Cable  
(External use for CPU Card)
- AC-501  
50-pin flat cable connector to 50-pin centronic male cable connector, 1 meter  
(External use for box and terminal panel connection)
- AC-502  
50-pin male centronic cable connector, 1 meter  
(External use for two boxes connection)
- AC-503  
9-pin male D-type cable connector, 1 meter

### CPU Card

- AX8035H  
Half-sized PC/AT486 All-in-one CPU Card
- AX8025H/386  
PC/AT386SX All-in-one CPU Card
- AX8025H/486  
PC/AT486SLC All-in-one CPU Card

### PC/104 Expansion Module

- AX10410  
High Speed Data Acquisition Module
- AX10415  
2 Ch. Analog Output Module
- AX10420  
48 Bit DIO Module
- AX10424  
24 Bit DIO and 3 Ch. Counter/Timer Module
- AX10425  
5/10 Ch. Counter/Timer Module
- AX10430  
Super VGA Display Controller Module
- AX10435  
Dual Drive Flash/EPROM/SRAM Disk Module
- AX10440  
IC Memory Card Carrier Drive Module
- AX10445  
Isolated Dual Ch. RS-422/485 Interface Module

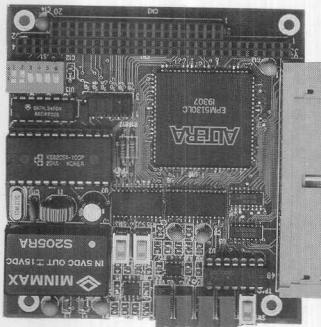


Headquarters:  
**AXIOM TECHNOLOGY CO., LTD.**  
3F. 14, Lane 235  
Pao Chiao Rd.,  
Hsin Tien Taiwan, R.O.C.  
TEL : 886-2-9174550  
FAX: 886-2-9173200

USA office:  
**AXIOM TECHNOLOGY, INC.**  
13791, Roswell Ave., Unit D  
Chino, CA91710  
Phone: (909) 4641881  
FAX : (909) 4641882

# AX10410

## High Speed Data Acquisition Module



### Features

- PC/104 standard expansion module
- Compatible with Keithley Metabyte DAS-16G
- Programmable gains: 1, 2, 4 and 8
- 16 Single-ended or 8 differential analog inputs with 12-bit resolution
- Up to 90KHz sample rate through DMA mode operation
- 2 channels of 12-bit D/A output
- 8-bit TTL/DTL compatible inputs and outputs
- 1 channel counter/timer
- Software drivers containing Basic, C, Pascal and Windows

### General Description

The AX10410 is a member of PC/104 family. This module can be installed to any PC/104 CPU boards to become a high performance data acquisition and control system. It offers five most desired functions in a PC/104 form-factor package: Analog Input, Analog Output, Digital Input, Digital Output and Counter/Timer.

The AX10410 features 8 differential or 16 single-ended analog input with 12-bit resolution. The AX10410 has a maximum sample rate of 90KHz. The AX10410 provides ranges for signal level inputs of +10V, +5V, +2.5V, +1.25V for unipolar and  $\pm 10V$ ,  $\pm 5V$ ,  $\pm 2.5V$ ,  $\pm 1.25V$  for bipolar. The transfer of data can be accomplished in 3 ways: by software trigger, interrupt service routine or DMA.

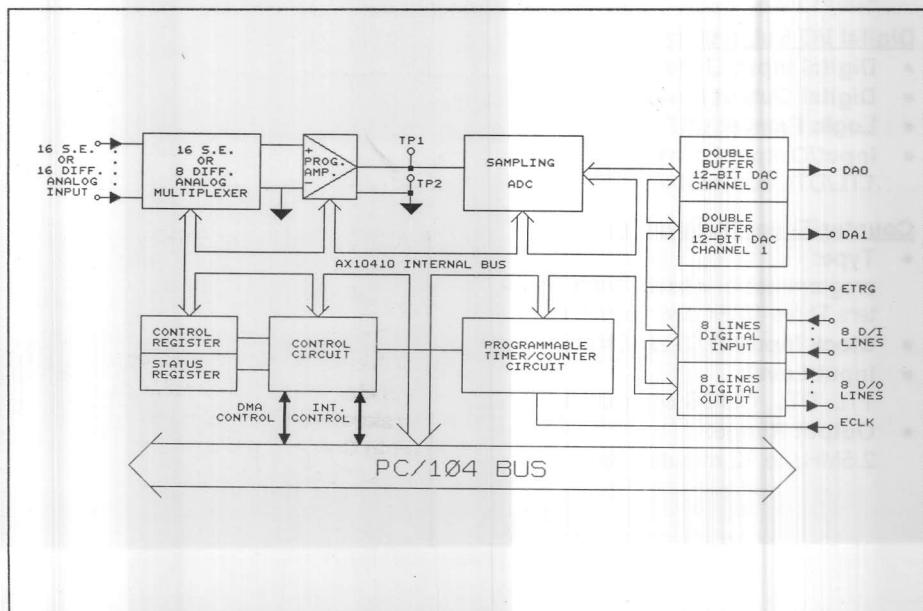
In addition to its analog inputs, the AX10410 also provides two channels of 12-bit analog output. The D/A converter may be operated with internal reference voltage  $\pm 5V$  bipolar or 0 to 10V unipolar.

16 bits of digital I/O are available on the AX10410. Eight bits of digital output and eight bits of digital input are brought out through the AX10410's 50-pin connector.

### Application

- Laboratory Automation
- Signal Analysis
- Chromatography
- Process Control

### Block Diagram



- Bipolar :  $\pm 1.25$ ,  $2.5$ ,  $5$ ,  $10V$
- Sampling Rate:** 90KHz max.
- System Accuracy (Gain=1):**  $\pm 0.03\%$  FSR
- Channel Acquisition Time to  $\pm 1/2$  LSB**  
Gain=1, 2, 4, 8, 10 :  $9 \mu s$
- A/D Conversion Time:**  $10 \mu s$
- Input Impedance**  
Off Channel:  $100M\Omega$ ,  $20pF$   
On Channel:  $100M\Omega$ ,  $20pF$
- Maximum Input Voltage Without Damage**  
Power On:  $\pm 35V$   
Power Off:  $\pm 20V$
- Common Mode Rejection Ratio:** Gain=1 : 90dB
- Integral Nonlinearity:**  $\pm 1$  LSB
- Number of Interrupts:** 1
- Channel of DMA:** 1 or 3

#### Analog Output Subsystem

- Number of Channel:** 2
- Output Ranges:**  
 $5V$  or  $0$  to  $+10V$ , internal reference supplied
- Current Output Capacity:**  $+5mA$  max.

#### Digital I/O Subsystem

- Digital Input Lines:** 8
- Digital Output Lines:** 8
- Logic Family:** LSTTL
- Input/Output Level:** TTL/DTL compatible

#### Counter/Timer Subsystem

- Type:** programmable interval timer counters Three 16-bit down counters
- Clock Input:** D.C. to 10MHz
- Input Level:** TTL, DTL, CMOS compatible
- Output Range:** 2.5MHz to 72 minutes/pls

- 25 to +85 °C
- Relative Humidity:** 0 to 90%, non-condensing

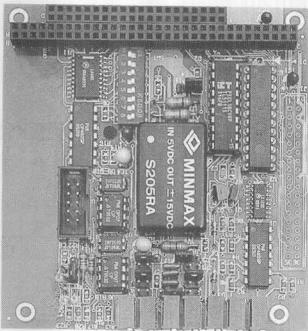
#### *Ordering Guide*

- AX10410**

High Speed Data Acquisition Module, Gains: 1, 2, 4, 8, including user's manual, utility diskette with Basic, C, Pascal and Windows drivers

# AX10415

## 2 Ch. Analog Output Module



### Features

- PC/104 standard expansion module
- 2 channels analog output module
- 0 to 5V, 0 to 10V, -2.5V to +2.5V, -5V to +5V, -10V to +10V or 4 to 20mA output range
- 12-bit resolution

### General Description

The AX10415 is an analog output PC/104 form-factor expansion module. It features 2 channels voltage or current output.

Each D/A channel is individually user selectable to any of the following ranges: 0 to 10V, 0 to 5V, -2.5V to +2.5V, -5V to +5V, -10V to 10V or 4 to 20mA. Current loop is protected from shorts to ground. This board can be used for analog control in processing or laboratory applications where material transfer rates, fluid flow, power consumption, motor speed, temperature levels, etc., are to be controlled.

### Specifications

#### Analog Output

- Number of Channels: 2 channels
- Output Voltage Range:  
Unipolar: 0 to 5V, 0 to 10V  
Bipolar : ±2.5V, ±5V, ±10V
- Output Current Range: 4~20mA
- Voltage Output Current Range:  
±5mA
- Source Impedance:  
0.1Ω max.  
0.02 Ω typ.

#### Accuracy

- Resolution: 12-bit
- Nonlinearity: ± 1 LSB
- Differential Nonlinearity:  
±1/2LSB
- System Accuracy:  
±0.025% FSR (Voltage)  
±0.05% FSR (Current)

#### Dynamic Performance

- Settling Time to 1/2LSB:  
10V step: 33μs  
5V step : 16μs
- Slew Rate:  
0.3V/μs typ. (Voltage)  
1.2mA/μs (current)
- DAC Throughput for Single Channel: 33KHz

#### Thermal Characteristic

- Zero Drift: ±10μv 1 °C
- Gain Drift: ±20PPM of FSR/°C

#### Power Requirements

- +5DCV: 700mA max.
- Loop Supply Range:  
6 to 40 VDC

#### Physical/Environmental

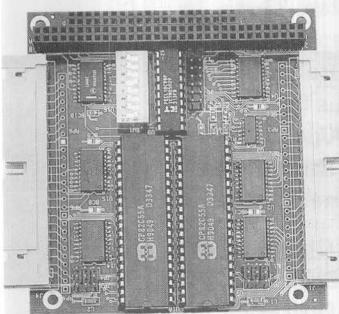
- I/O Connector:  
10-pin mating connector or 9-pin D-type connector
- Dimensions: 95 × 90mm
- Weight: 200g
- Operating Temperature Range:  
0 to +60 °C
- Storage Temperature Range:  
-25 to +85 °C
- Relative Humidity:  
0 to 90%, non-condensing

### Ordering Guide

- AX10415  
2 Ch. Analog Output Module

# **AX10420**

## **48 Bits DIO Module**



### **Features**

- PC/104 standard expansion module
- Low cost DIO Module
- 48 channels TTL/DTL compatible DIO
- Two 24-bit groups programmable as inputs or outputs
- Capable of driving Opto-22 compatible digital I/O module
- Supports 8255 PPI mode 0
- Buffer circuit provides the high sinking current capacity

### **General Description**

The AX10420 is a 48 channels (bits) digital input and output PC/104 form-factor expansion module. The board can be used with TTL low-level input/output circuitry or with AX754, AX755, AX756 and AX1416/24 providing isolation for interfacing with high level input and output signals.

The 48 channels are arranged into 2 separated groups, which consists of 24 channels DIO. Each group supports a 8255 PPI chip mode 0 in software. The 24 channels DIO is further divided into three ports with 8 bits per port. This 8-bit port can be configured to function as input or output.

There is an unique feature associated with AX10420, an interrupt on change of state. Interrupt generation occurs when one of the several digital input channels changes state in a single port. This feature frees up the PC to do other activities since there is no need to poll the digital input port for an event to occur.

### **Specifications**

#### Digital I/O

- Input/Output Lines: 48
- Operation Mode: 8255 Mode 0
- Interrupt Options: Jumper-selectable to level 9, 5, 10, 11, 12, 15
- I/O Configuration: TTL/DTL compatible

#### Power Requirement

- +5DCV: 400mA typ

#### Physical/Environmental

- I/O Connector: Two 50-pin male ribbon connector
- Dimensions: 95 x 90mm
- Weight: 100g
- Operating Temperature Range: 0 to +60 °C
- Storage Temperature Range: -25 to +85 °C
- Relative Humidity: 0 to 90%, non-condensing

### **Ordering Guide**

- AX10420  
48 Bits DIO Module

#### Screw Terminal Panel

- AX751  
Universal Screw Terminal Panel

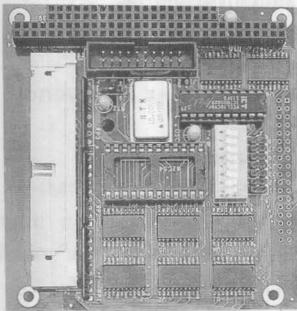
#### Signal Conditioning Panel

- AX754  
24 Ch. Opto-isolated D/I Panel
- AX755  
8 Ch. Relay Output & 16 Ch. Opto-isolated D/I Panel
- AX756  
24 Ch. Relay Actuator Panel

**Note:** SSR I/O Panels and Modules are also available, please turn to the "Terminal & Signal Conditioning Family" for more details.

# **AX10424**

## **24 Bits DIO & 3 Ch. Timer/Counter Module**



### **Features**

- PC/104 standard expansion module
- 24 TTL/DTL digital I/O lines
- 24mA output drive/sink current
- Easy interface to high level signal through relay or SSR panel
- Three 8-bit groups independently selectable for I/O
- Three programmable counter/timer channels
- External input interrupt ability
- Internal or external power selection
- 50-pin digital connector compatible with AX756, AX755, AX754 or AX1416/24 accessory panel

### **General Description**

The AX10424 is a 24 bits DIO and 3 channels timer/counter PC/104 form-factor expansion module. The AX10424 counter/timer functions are designed around the most popular 82C54 IC chip. The 82C54 is an extremely easy to use in timing control circuit.

The 24 bits DIO that emulate 8255 mode 0 can be used with TTL low level input/output circuitry or with AX754, AX755, AX756 and AX1416/24 providing isolation for interfacing with high level input and output signals.

### **Specifications**

#### Input and Output

- Input/Output Lines: 24
- I/O Configuration: TTL/DTL compatible
- Operation Mode: Emulates 8255 mode 0
- Input/Output Mode: Pair
- Improved Noise Margins: Hysteresis,  $V_T^+ - V_T^- = 0.4$  (typ.)

#### Programmable Counter/Timer

- Type: 82C54
- Number of Counters: independent 16-bit counters
- Frequency Range: DC to 10MHz

- Mode: 6 programmable mode
- Input/Output Level: TTL, DTL, CMOS compatible

#### Power Requirement

- +5DCV : 400mA typ.

#### Physical /Environmental

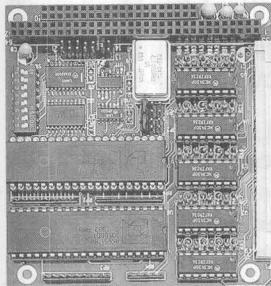
- I/O connector: 50-pin male ribbon connector
- Dimensions: 95 x 90mm
- Weight: 200g
- Operating Temperature Range: 0 to +60 °C
- Storage Temperature Range: -25 to +85 °C
- Relative Humidity: 0 to 90%, non-condensing

### **Ordering Guide**

• <b>AX10424</b> 24 Bits DIO & 3 Ch. Timer/ Counter Module
<b>Screw Terminal Panel</b>
• <b>AX751</b> Universal Screw Terminal Panel
<b>Signal conditioning Panel</b>
• <b>AX754</b> 24 Ch. Opto-isolated D/I Panel
• <b>AX755</b> 8 Ch. Relay Output & 16 Ch. Opto-isolated D/I Panel
• <b>AX756</b> 24 Ch. Relay Actuator Panel <i>Note: SSR I/O Panels and Modules are also available, please turn to the "Terminal &amp; Signal Conditioning Family" for more details.</i>

# AX10425

## 5/10 Ch. Counter/Timer Module



### Features

- PC/104 standard expansion module
- 5/10 independent 16-bit counters
- Up to 7 MHz count frequency
- Up/Down and BCD/Binary counting
- Complex duty cycle waveform outputs
- Alarm comparators on Counter 1 and 2
- One shot or continuous output
- Selectable interrupt input channel
- Programmable Count/Gate selection
- Programmable input/output polarity
- Programmable gating functions
- Internal 1 MHz frequency
- Counter/Timer input protection ( $\pm 12V$ )
- Adjustable input threshold for SREC & GATE input

### General Description

The AX10425 is a 5/10 channel counter/timer PC/104 form-factor expansion module. It contains 5/10 16-bit counters for using in a wide variety of application.

The AX10425 counter/timer functions are designed around the popular AMD Am9513 chip. The Am9513 is an extremely flexible timing control circuit that contains five 16-bit counter/timers, a programmable frequency source, a programmable frequency output, and control circuitry.

This integrated circuit provides enormous flexibility for permitting hundreds of programmable configurations that count events; generate square waves with simple or complete duty cycles; support external timing sources, triggers, and gates; and provide time-of-day clock and alarm functions.

### Specifications

#### Counter/Timer (Am9513APC)

- **Number:** 5/10 16-bit counter/timer
- **Maximum Input Frequency:** 7MHz
- **Base Frequency:**
- Hardware-select for 1MHz (1 $\mu$ s interval), 2MHz (500ns interval), or 4MHz (250ns interval) oscillator
- **Scale Values:**
- Base frequency can be divided by 1, 10, 100, 1000 (BCD); or 1, 16, 256, 4096, or 65535 (binary)
- **Preset V = 1.5V**

#### Power Requirements

- +5DCV : 1000mA typ.
- -5DCV : -30mA
- +12DCV: 15mA
- -12DCV : -15mA

#### Physical/Environmental

- **I/O Connector:** 50-pin male ribbon connector
- **Dimensions:** 95 x 90mm
- **Weight:** 100g
- **Operating Temperature Range:** 0 to +60 °C
- **Storage Temperature Range:** -25 to +85 °C
- **Relative Humidity:** 0 to 90%, non-condensing

### Ordering Guide

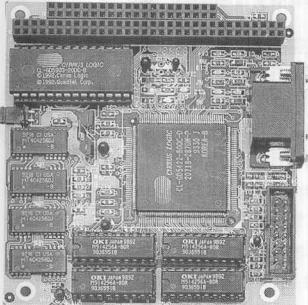
- **AX10425/5**  
5 Ch. Counter/Timer Board
- **AX10425/10**  
10 Ch. Counter/Timer Board

# AX10430

## Super VGA Display Controller Module

### Features

- All the capabilities of IBM's PS/2 VGA display adapter
- A 16-bit PC/104 bus interface for high speed display memory access
- Jumper setting zero wait-state allows assertion of zero wait-state operation
- Onboard built-in 1MB dynamic memory for high speed video display access
- 132 column alphanumeric mode on all display monitors
- Supports extensive graphics mode from 640 × 480 to 1280 × 1024 resolution
- PC/104 form-factor module compact size reduces to 3.6 by 3.8 inches
- Rugged and reliable 64 and 40 contact 6 headers replace the standard PC's edge card connector



### General Description

The AX10430 is a super VGA display, universal PC/104 form-factor control module. It is a small-size control board that plugs into any PC/104 carry board.

The AX10430 supports extensive graphics mode from 640 × 480 to 1280 × 1024 maximum resolution, and also built-in 512K bytes of high speed video memory.

### Specifications

#### General

- **Chipset :** Cirrus GD5422
- **Bus Connector:** 64 pin/40 pin male/female header

#### Extensive Graphics Mode Support

- **640 × 480:** 256 color; 8 bits/pixel/32K & 64K color; 16 bits/pixel 16M color; 24 bits/pixel
- **800 × 600:** 16 color; 4 bit-planes 256 color; 8 bits/pixel
- **1024 × 768:** 16 color; 4 bit-planes (interlaced and non-interlaced), 8 bits/pixel (interlaced and non-interlaced)
- **1280 × 1024:** 16 color; 4 bit-planes (interlaced)

#### Power Requirement

- +5DCV: 200mA typ.

#### Physical/Environmental

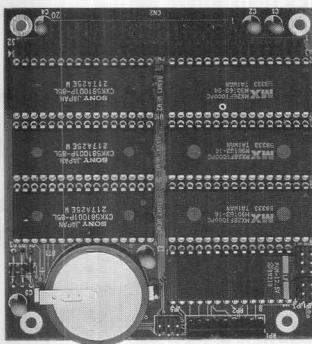
- **Dimensions:** 95 × 90mm
- **Weight:** 125g
- **Operating Temperature Range:** 0 to +60 °C
- **Storage Temperature Range:** -25 to +85 °C
- **Relative Humidity:** 0 to 90%, non-condensing

### Ordering Guide

- **AX10430**  
Super VGA Display Controller  
Module with 1MB memory

# AX10435

## Dual Drive Flash/EPROM/SRAM Disk Module



### Features

- PC/104 standard expansion module
- Two Flash/EPROM/SRAM memory bank
- Emulates up to two floppy disk drives (as drive A, B, C or D) in 320KB, 360KB, 720KB, 1.2MB, 1.44MB format
- Rechargeable Lithium backup battery for CMOS SRAM
- Utility software included
- Memory mapped data transfer scheme
- Each card occupies 16 KB of system memory space
- Power-on auto-boot feature
- Provides up to 2.88MB memory size with both banks linked together
- Up to 5 modules can be mapped together to provide 7.2MB of contiguous storage per bank.

### General Description

The AX10435 is a Dual Drive Flash/EPROM/SRAM Disk, universal PC/104 form-factor solid state disk. It can emulate two floppy disk drives and provide memory size of 320KB to 2.88MB using Flash/EPROM/SRAM.

When the environment is too harsh for drives, with its significant speed advantages, the module allows user to substitute the onboard semiconductor devices.

### Specifications

#### General

- Maximum Memory Size:  
**1st Bank:**  
1.44MB Flash/EPROM/SRAM  
**2nd Bank:**  
1.44MB Flash/EPROM/SRAM  
**Both Banks Linked Together:**  
2.88MB Flash/EPROM /SRAM
- Device Size Supported:  
**Flash:** 28F010, 28F020, 28F040  
**EPROM:** 27C010, 27C020, 27C040  
**SRAM:** 58C1000, 58C4000
- Backup Battery for SRAM:  
3V 100mAhr rechargeable Li back-up battery

#### Power Requirements

- +5DCV : 300mA max.
- +12DCV : 4mAmax.

#### Physical/Environmental

- Dimensions: 95 x 90mm
- Weight: 125g
- Operating Temperature Range: 0 to +60°C
- Storage Temperature Range: -25 to +85°C
- Relative Humidity: 0 to 90%, non-condensing

### Configuration of Memory

Bank 1 or 2 (3pcs memory sockets for each bank)

Memory	128K	360K	720K	1.44MB
27C010	1	3	--	--
27C020	--	2	3	--
27C040	--	--	2	3
58C1000	1	3	--	--
58C4000	--	--	2	3
28F010	1	3	--	--
28F020	--	2	3	--
28F040	--	--	2	3

Bank 1 + Bank 2 (6pcs memory sockets for two banks)

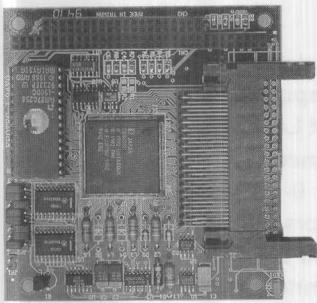
Memory	128K	360K	720K	1.44MB	2.88MB
27C010	1	3	6	--	--
27C020	--	2	3	6	--
27C040	--	--	2	3	6
58C1000	1	3	6	--	--
58C4000	--	--	2	3	6
28F010	1	3	6	--	--
28F020	--	2	3	6	--
28F040	--	--	2	3	6

### Ordering Guide

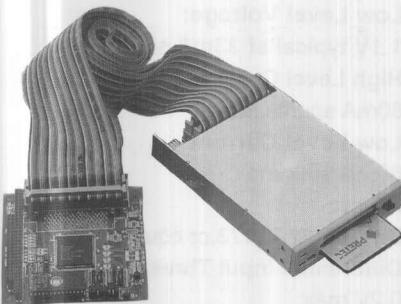
- AX10435  
Dual Drive Flash/EPROM/SRAM Disk Module

# **AX10440A/E**

## **IC Memory Card Carrier Module**



**AX10440A**



**AX10440E**

### **Features**

- PC/104 standard expansion bus
- Supports two PCMCIA IC memory card sockets
- Supports Flash and SRAM IC memory card
- Jumper selected memory and I/O address
- LED indicator for busy status
- Onboard built-in ROM-BIOS
- Detects card change and presence automatically
- Easy removal for memory card with ejector connector (only for AX10440E)
- Auto-bootable when setting at drive A
- Requires PC/AT386, DOS5.0, Windows 3.1 or later and 8MHz bus-clock
- Supports PCMCIA V2.0/JEIDA 4.1 standard
- Operates with CardTalk software package
- Single power (+5V) requirement

### **General Description**

The AX10440A is IC memory card carrier, universal PC/104 form-factor drive module. AX10440E separates the carrier module with the ejector for external use. It complies with PCMCIA 2.0/JEIDA 4.1 sockets to accommodate Type I and Type II cards. Two cards, which both cards may be two Type I cards or one Type I and one Type II card, can be accommodated at the same time.

AX10440A/E reads and writes Flash, SRAM IC memory card. When using Type I IC memory cards, it works just like a standard DOS drive which recognizes all commands from DOS 5.0 or later.

### **Specifications**

#### **General**

- **Chipset:** DataBook DB 86082 or compatibles
- **PCMCIA Card Sockets:**
  - Socket 0: For Type I card only
  - Socket 1: For Type I or Type II card
- **Supports Memory Type:**
  - SRAM: 64KB to 64MB memory size
  - Flash: 256KB to 64MB memory size

#### **Power Requirement**

- +5DCV: 100mA typ.

#### **Physical/Environmental**

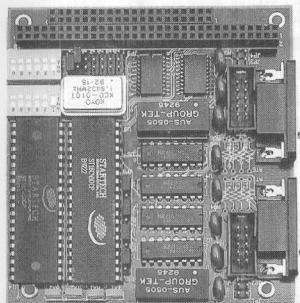
- **Dimensions:** 95 x 90mm
- **Weight:**
  - AX10440A: 130g
  - AX10440E: 430g
- **Operating Temperature Range:** 0 to 60 °C
- **Storage Temperature Range:** -25 to +85 °C
- **Relative Humidity:** 0 to 90%, non-condensing

### **Ordering Guide**

- **AX10440A**  
IC Memory Card Carrier Module, including user's manual, utility disk
- **AX10440E**  
IC Memory Card Carrier Module with external ejector, including user's manual, utility disk and two 30 cm 50-pin flat cables
  - AM4301**  
512K SRAM Memory Card
  - AM4302**  
1MB SRAM Memory Card
  - AM4201**  
512K Flash Memory Card
  - AM4202**  
1MB Flash Memory Card

# AX10445A/B

## Isolated Dual Port RS-422/485 Interface Module



### Features

- PC/104 standard expansion bus
- Two independent EIA RS-422/485 interface
- Reliable communication up to 4000 feet (1.2Km) at 100K bps
- IBM compatible serial ports up to 57600 BAUD rates
- Selectable UART port address from hex 200 to 3F8
- Jumper selectable interrupt level IRQ 2, 3, 4, 5, 6, 7
- Support TX, RX, RTS and CTS signals
- Two or four wire operation
- Onboard termination resistors
- Onboard surge absorbers
- Fully isolated input and output for AX10445A  
Onboard TX and RX LED indicators

### General Description

The AX10445 is a dual port RS-422/485 module that plugs into any PC/104 bus interface. The AX10445 permits higher data rates and longer cable lengths of asynchronous communications than RS-232. Complete with AX4285, your PC can communicate with other computers or devices having the same communication parameters and interface through the two 9-pin D-type connectors on the right edge of the module.

As the AX10445 is designed for long distance data transmission, possibly this card is connected with outdoor cables that the high voltage from the environment may damage the integrated circuit on the module. For protection at both channel, we provide a varistor (and a termination resistor) connected between each of the communication wire lines and ground.

### Specifications

#### General

- **Baud Rate:** 50 to 57,600 bps
- **Clock Input:** 1.8432 MHz
- **Interrupt Level:** IRQ 2, 3, 4, 5, 6, 7
- **I/O Connector:**  
Dual 9-pin D-type male connectors or dual flat cable expanded D-type connector
- **Bus Connector:**  
64-pin/40-pin male/female header
- **Transmitter:**
  - Device: SN75172 or equivalent
  - **High Level Voltage:**  
3.7V typical at 33mA source
  - **Low Level Voltage:**  
1.1V typical at 33mA source
  - **High Level Current:**  
60mA source max.
  - **Low Level Current:**  
60mA sink max.
- **Receiver:**
  - Device: SN75173 or equivalent
  - **Differential Input Threshold:**  
0.2V max.
  - **Hysteresis:** 50mA typical
  - **Input Impedance:**  
>12KΩ with terminators

#### Power Requirements

- **AX10445A:** +5DCV, 500mA typ.
- **AX10445B:** +5DCV, 300mA typ.

#### Physical/Environmental

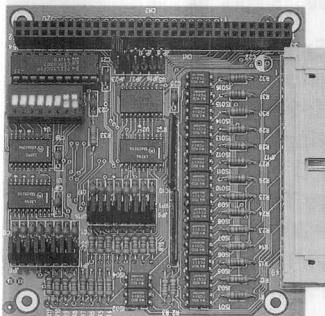
- **Dimensions:** 95 x 90mm
- **Weight:** 125g
- **Operating Temperature Range:**  
0 to +60 °C
- **Storage Temperature Range:**  
-25 to +85 °C
- **Relative Humidity:**  
0 to 90%, non-condensing

### Ordering Guide

- **AX10445A**  
Isolated Dual Port RS-422/485  
Interface Module
- **AX10445B**  
Dual Port RS-422/485 Interface  
Module

# AX10450

## 16 Ch. Opto-isolated Digital Input Module



### Features

- 16 channels opto-isolated input
- Isolation up to 1000 Vrms
- Filter circuit included
- Wide input range

### General Description

The AX10450 opto-isolated input PC/104 module is designed for monitoring digital input status. It provides 16 channels of input to detect ON/OFF, OPEN/CLOSE signals and has interrupt capability on its first channel. The input range is from 5V to 24V suitable for many application. Also the isolation voltage is up to 1000 Vrms from the input end to the host. This feature causes voltage spikes that often occur in harsh industrial environments to be safely isolated from the computer.

### Applications

- Industrial ON/OFF Monitoring
- Limit Switch Monitoring
- Valve/Solenoid Monitoring

### Specifications

#### Input

- Opto-isolator: PC814 or equivalent
- Channel: 16
- Voltage Range:  $\pm 5V \sim \pm 24V$  (logic 1 output)
- Current Limit Resistor:  $1.2K\Omega$ , 0.5W
- Current Maximum:  $\pm 50mA$
- Connector: 50-pin mating connector

#### Power Requirements

- +5DCV : 400mA

#### Physical/Environmental

- Dimensions: 95 x 90mm
- Weight: 80g
- Operating Temperature Range: 0 to 50°C
- Storage Temperature Range: -25 to +85°C
- Relative Humidity: 0 to 90%, non-condensing

### Connector Pin Assignment

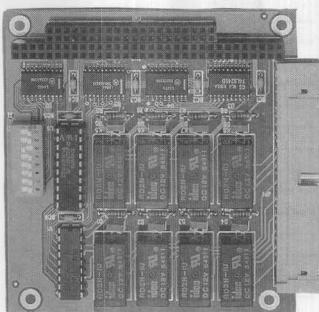
DIO	1	2	DI8
-DIO	3	4	-DI8
GND	5	6	GND
DI1	7	8	DI9
-DI1	9	10	-DI9
GND	11	12	GND
DI2	13	14	DI10
-DI2	15	16	-DI10
GND	17	18	GND
DI3	19	20	DI11
-DI3	21	22	-DI11
GND	23	24	GND
DI4	25	26	DI12
-DI4	27	28	-DI12
GND	29	30	GND
DI5	31	32	DI13
-DI5	33	34	-DI13
GND	35	36	GND
DI6	37	38	DI14
-DI6	39	40	-DI14
GND	41	42	GND
DI7	43	44	DI15
-DI7	45	46	-DI15
+12V	47	48	+12V
+12V	49	50	+12V

### Ordering Guide

- AX10450  
16 Ch. Opto-isolated Digital Input  
Module

# AX10455

## 8 Ch. Relay Actuator PC/104 Module



### Features

- 8 single-pole, double-throw relays
- 125VAC/1.5A maximum contact rating
- Isolation upto 1000 Vrms
- NC, NO and COM contacts output
- LED indicators to show activated relays

### General Description

The AX10455 relay actuator PC/104 module is designed for control applications. It contains 8 channels electromechanical single-pole double throw relays which can be set or reset directly by I/O write instructions. Each relay is rated at 1.5A at 125VAC. The normal open, normal close and common contacts of each relay are brought out through 50-pin box header connectors. A LED, adjacent to each relay, lights up when the relay is energized. The relay is activated when a logic high is write to I/O port address.

### Specifications

#### Electric Characteristic

- **Number of Channel:**  
8 red LEDs & 8 relays
- **Indication Node:**  
Logic "1": LED light and relay set  
Logic "0": LED dark and relay reset
- **Relay Type:**  
Electromechanical DIP relay (DPDT)
- **Output Type:**  
NO, NC and Common
- **Contact Rating:**  
Maximum switch power ≈ 30W/60VA  
Maximum switch voltage ≈ 125VDC, 125V peak AC  
Maximum switch current ≈ 1.5ADC or 1.5A peak AC
- **Contact Resistance:**  
100mΩ max.
- **Life Expectancy:**  $10 \times 10^6$  operation
- **Operate/Release Time:** 8/8 ms
- **Breakdown Voltage:**  
Coil to Contact : 1500 Vrms  
Across Contact : 1000 Vrms

#### Power Requirements

- +5DCV : 200mA
- +12DCV : 100mA

#### Physical/Environmental

- **Dimensions:** 95 x 90mm
- **Weight:** 230g
- **Operating Temperature Range:** 0 to 50°C
- **Storage Temperature Range:** -20 to +70°C
- **Relative Humidity:** 0 to 90%, non-condensing

### Connector Pin Assignment

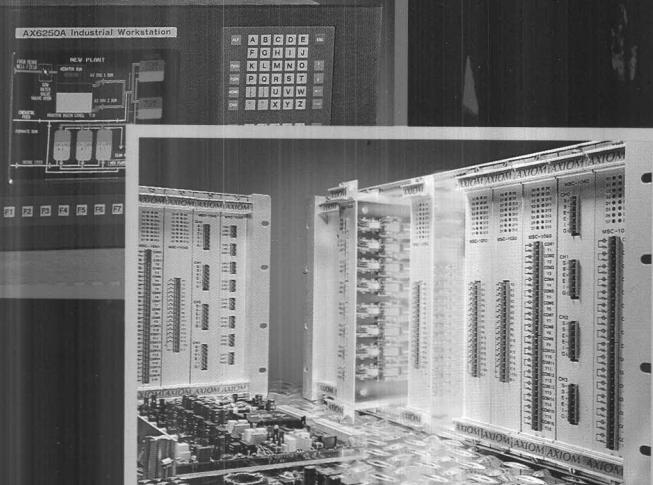
CN1	
R1COM	1
R1NC	3
R1NO	5
R2COM	7
R2NC	9
R2NO	11
R3COM	13
R3NC	15
R3NO	17
R4COM	19
R4NC	21
R4NO	23
R5COM	25
R5NC	27
R5NO	29
R6COM	31
R6NC	33
R6NO	35
R7COM	37
R7NC	39
R7NO	41
R8COM	43
R8NC	45
R8NO	47
	49
	50

### Ordering Guide

- **AX10455**  
8 Ch. Relay Actuator PC/104  
Module

# *Complete Solution of Industrial PCs Data Acquisition Series*

*For PC Based Industrial And Lab Automation*



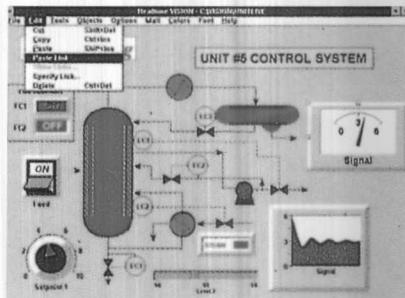
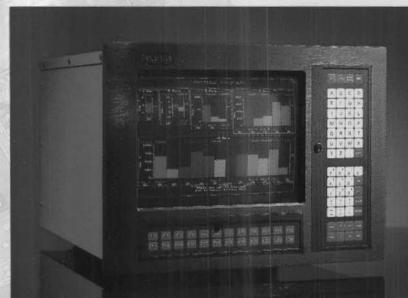
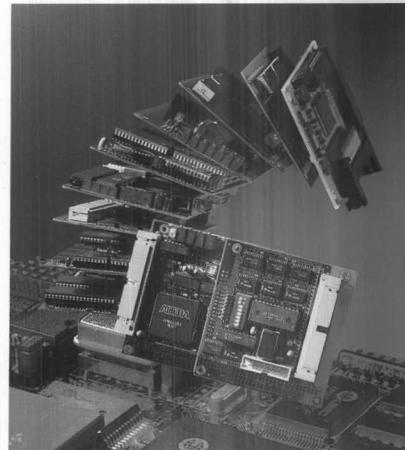
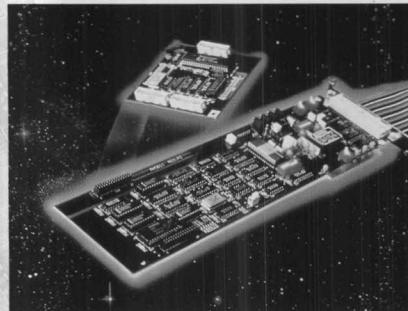
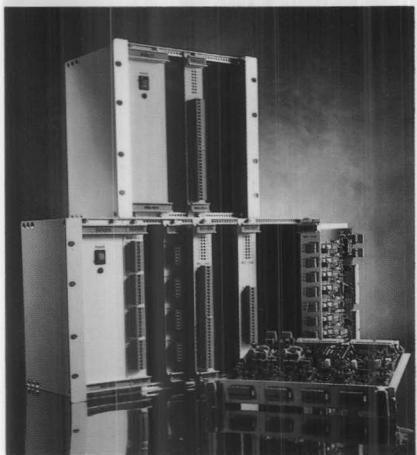
VOLUME 511 CONDENSED CATALOG

# Complete Product Lines for your best choice

**AXIOM Technology Co., Ltd.** served virtually all laboratories and industrial market. We offer a full range of PC-based automation products; from industrial computers, data acquisition and instrumentation board level products to industrial computer systems.

We aims to be the best company in Taiwan specializing in industrial PCs and data acquisition, and our staff brings to their efforts experience well beyond the company's four years of experience. This experience is manifest in a number of product firsts that the company has achieved.

Our current plans are to continue to upgrade its product line to compete, in terms of both quality and price, in the upper levels of the industrial PC marketplace.



## Data Acquisition Series (DAS)

DAS series provide a direct interface between real-world analog and digital I/O for the IBM PC/AT and compatibles. The series products include A/D, D/A, DIO, Counter/Timer, Communication series of GP-IB, RS-232, RS-422/485, and a whole series of signal conditioning & screen terminal panels. The series boards are extremely cost-effective and provide convenient means of interfacing a PC to the real-world.

## Industrial PC Series (I-PC)

For system integrators and users who seek small industrial PC-compatible system, AXIOM offers a wide range of industrial chassis, NEMA 4/12 industrial workstations, all-in-one CPU cards with PC/104 series and RAM/ROM/Flash disk card to be used as operator's interface controller for information and data acquisition systems or for process of monitoring and control.

## Signal Conditioning

MSC-1000 is powerful, multi-channel signal conditioning front-end system not only on the high capacity and flexibility of several functional modules, but also a rugged, low noise chassis. Modules are available for signal multiplexing, isolation, amplification, cold-junction compensation, relay actuator, isolated digital input, and more. All modules are designed and tested to work optionally with our DAS boards.

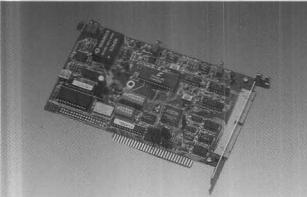
## SBC Series and PC/104 Modules

We design & manufacture a whole series of single board computers and industrial I/O modules that support the PC/104 standard for OEM and industrial and Lab applications. These product lines include the 386SX, 486SLC, 486SX, 486DX and 486DX2 SBC; RAM/ROM/ FLASH disk, PCMCIA IC memory drive, SVGA module and 8 data acquisition modules.

## Data Acquisition/PC Instrument

### **AX5622B**

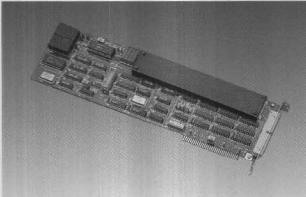
Low Cost High Resolution DA&C Board



- ♦ Low cost half-sized DA&C board
- ♦ 16 S.E./8 DI. A/D with 16-bit resolution
- ♦ Up to 40KHz sampling rate, DMA & interrupt support
- ♦ 2 ch. of 12-bit D/A output
- ♦ 8 bits of TTL/DTL compatible DIO

### **AX5621**

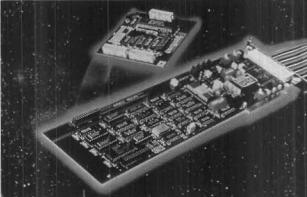
High Resolution Data Acquisition Board



- ♦ Compatible with Keithley Metrabyte DAS-HRES
- ♦ 8 DI. A/D with 16-bit resolution
- ♦ Up to 50KHz sampling rate, DMA & interrupt support
- ♦ 2 ch. of 16-bit D/A output
- ♦ 8 bits of TTL/DTL compatible DIO

### **AX5611**

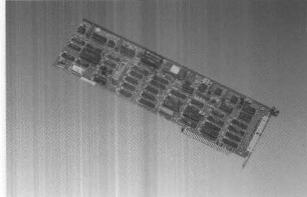
High Performance DA&C Carrier Board & Module



- ♦ Compatible with Keithley Metrabyte DAS-16
- ♦ 16 S.E. & 8 DI. A/D with 12-bit resolution
- ♦ Up to 100KHz sampling rate, DMA & interrupt support
- ♦ 8 bits of TTL/DTL compatible DIO
- ♦ Onboard bus permits to plug-in D/A, DIO & counter/timer expansion modules

### **AX5412**

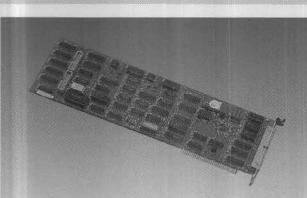
High Speed Data Acquisition Board



- ♦ Compatible with Keithley Metrabyte DAS-16G
- ♦ 16 S.E./8 DI. A/D with 12-bit resolution
- ♦ Up to 90KHz sampling rate, DMA & interrupt support
- ♦ 2 ch. of 12-bit D/A output
- ♦ 8 bits of TTL/DTL compatible DIO

### **AX5411**

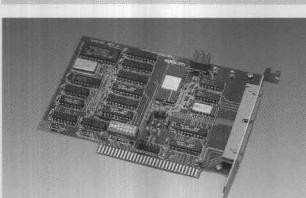
General Purpose DA&C Board



- ♦ Compatible with Keithley Metrabyte DAS-16 (only S.E.)
- ♦ 16 S.E. A/D with 12-bit resolution
- ♦ Up to 60KHz sampling rate, DMA & interrupt support
- ♦ 2 ch. of 12-bit D/A output
- ♦ 24 D/I & 24 D/O channels

### **AX5210**

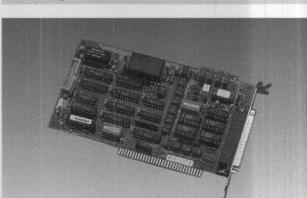
Low Cost A/D Board



- ♦ 16 S.E. A/D with 12-bit resolution
- ♦ Up to 12.5KHz sampling rate for PC/XT/AT, interrupt support
- ♦ Programmable pacer clock can be used to initiate repeated conversions
- ♦ 8 bits of TTL/DTL compatible DIO

### **AX5232**

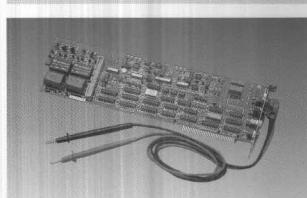
32 Channel Isolated Temp./Voltage Measurement Board



- ♦ 32 channels of thermocouple and voltage measurement
- ♦ Fully isolated from the host computer
- ♦ Onboard cold-junction compensation circuitry
- ♦ 8 digital input/output channels
- ♦ Sample rate: 100Hz

### **AX5810**

16-bit Virtual Data Logger



- ♦ 4 1/2 Digit resolution
- ♦ Fully isolated analog input
- ♦ 30mV~300VDC auto-range input
- ♦ 30~300KΩ auto-range input
- ♦ 8 bits of TTL/DTL compatible DIO

### **AX5820**

5 1/2 Digit 4-wire DVM

*NEW*

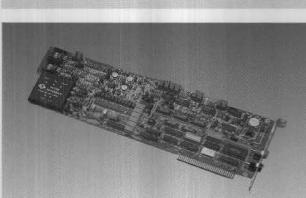
*NEW*

Not Available

- ♦ 5 1/2 digit resolution
- ♦ Programmable filter, max. sampling rate: 1KHz
- ♦ 30mV~300VDC auto-range input
- ♦ 30~300KΩ auto-range input
- ♦ Fully isolated analog input

### **AX5830**

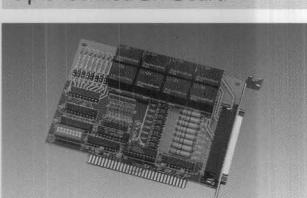
5MHz Function Generator Card



- ♦ Sine, square & triangle waveforms
- ♦ Frequency range from 1Hz to 5MHz
- ♦ 20V<sub>P-P</sub> output with ±5V offset
- ♦ Fully isolated from the host computer

### **AX5008**

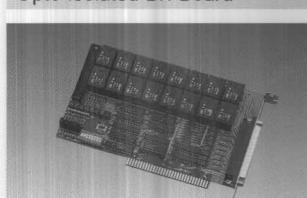
8 Channel Relay Actuator & Opto-isolated D/I Board



- ♦ 8 electro-mechanical relay outputs
- ♦ 3A contact rating at 120VAC or 24VDC
- ♦ 8 opto-isolated digital inputs
- ♦ 1000V fully isolation

### **AX5032**

16 Channel Relay Actuator & Opto-isolated D/I Board

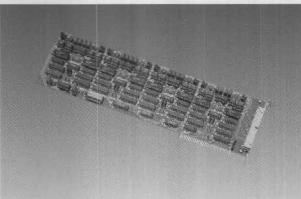


- ♦ 16 electro-mechanical relay outputs
- ♦ 3A contact rating at 120VAC or 24VDC
- ♦ 16 opto-isolated digital inputs
- ♦ 1000V fully isolation

## Industrial I/O

**AX5212**

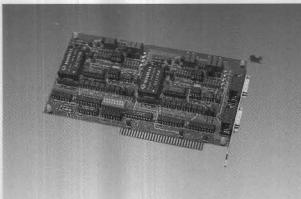
8 Channel Analog Output Board



- ♦ 8 D/A channels with 12-bit resolution
- ♦ 0 to 5V, 0 to 10V, -2.5 to 2.5V, -5 to 5V or 4 to 20mA output ranges
- ♦ 33KHz throughput, single channel

**AX5213**

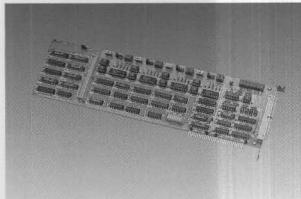
2 Channel Isolated Analog Output Board



- ♦ 2 isolated D/A channels with 12-bit resolution
- ♦ 0 to 5V, 0 to 10V, -5 to 5V, -10 to 10V, 0 to 20mA or 4 to 20mA output ranges
- ♦ 500VDC isolated voltage

**AX5414**

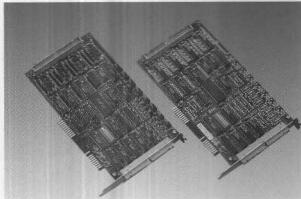
4 Channel Analog Output & 32 Bit DIO Board



- ♦ 4 D/A channels with 12-bit resolution
- ♦ 0 to 5V, 0 to 10V, -2.5 to 2.5V, -5 to 5V, -10 to 10V or 4 to 20mA output ranges
- ♦ 8 bits of TTL/DTL compatible DIO
- ♦ 24 bit programmable DIO emulates 8255 PPI mode 0

**AX5220A/B**

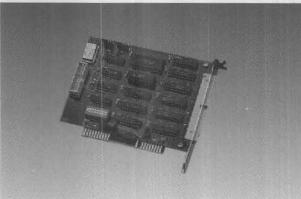
32 Bit Digital I/O and Counter/Timer Board



- ♦ 32 digital input channels and 32 digital output channels
- ♦ Low input loading
- ♦ High output driving capacity (100mA) for AX5220B
- ♦ 3 programmable counter/timer channels

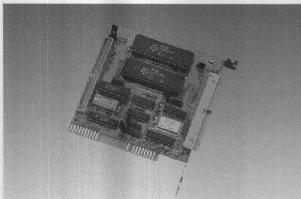
**AX5224**

24 Bit DIO & 3 Channel Counter/Timer Board



- ♦ 24 TTL/DTL compatible digital I/O lines arranged into three 8-bit groups
- ♦ Emulates 8255 PPI mode 0
- ♦ Software programmable for inputs/outputs
- ♦ Three programmable counter/timer channels

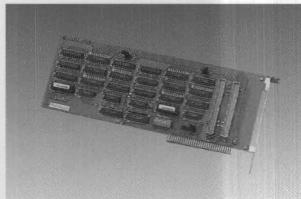
NEW

**AX5240** 32 Bit DI with Interrupt, 40 Bit DIO, or 6 Channel Counter/Timer Board

- ♦ Fully programmable for combinations of up to --
  - 32 vector interrupt director
  - 40 bits of bit setable digital I/O
  - Six 16-bit counters with input of counter, trigger, gate and output of counter/timer

**AX5214**

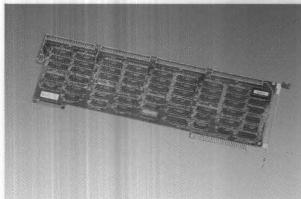
48 Bit DIO Board



- ♦ 48 TTL/ DTL compatible digital I/O lines arranged into 8-bit ports
- ♦ Emulates 8255 PPI mode 0
- ♦ Software programmable for inputs/outputs

**AX5215**

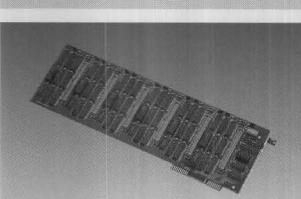
96 Bit DIO Board



- ♦ 96 TTL/ DTL compatible digital I/O lines arranged into 8-bit ports
- ♦ Emulates 8255 PPI mode 0
- ♦ Software programmable for inputs/outputs

**AX5244**

144 Bit DIO Board

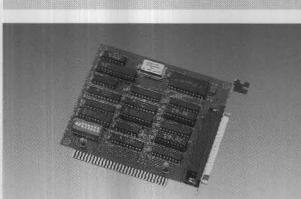


- ♦ 144 TTL/DTL compatible digital I/O lines arranged into 8-bit ports
- ♦ Emulates 8255 PPI mode 0
- ♦ Capable of driving Opto-22 compatible I/O module
- ♦ Software programmable for inputs/outputs

NEW

**AX5016**

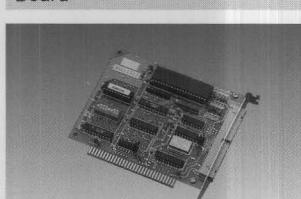
16 Bit High Speed DIO Board



- ♦ Transfer rates up to 250,000 bytes or 125,000 words
- ♦ DMA, interrupt or program controlled transfers
- ♦ Free high level software drivers

**AX5216**

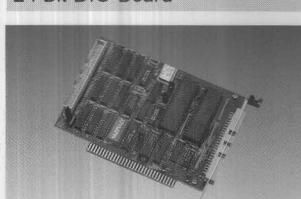
5 Channel Counter/Timer Board



- ♦ One AMD Am9513A provides five 16-bit counter/timers
- ♦ High speed counting rate up to 7MHz
- ♦ 8 bits of TTL/DTL compatible DIO

**AX5218**

10 Channel Counter/Timer & 24 Bit DIO Board



- ♦ Two AMD Am9513A provide ten 16-bit counter/timers
- ♦ High speed counting rate up to 7MHz
- ♦ 24 bit programmable DIO emulates 8255 PPI mode 0

## Modular Signal Conditioning & External Chassis



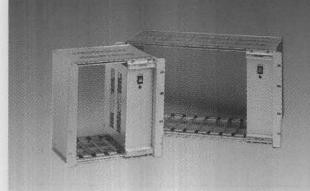
**MSC-1000C**  
Modular MicroBox/  
Wall-Mounted Chassis



- ◆ Compact and rugged half-sized chassis can be a controller for MSC-1000 series or stand-alone MicroBox
- ◆ 4-slot PC/AT compatible passive backplane
- ◆ 100W switching power supply
- ◆ Provides +5VDC and +12VDC output for versatile application



**MSC-1000/4, MSC-1000/10**  
4/10-Slot Chassis



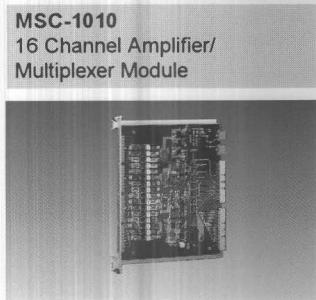
- ◆ Chassis houses all MSC-1000 series modules
- ◆ Aluminum chassis with 6 standard cabinet unit height
- ◆ Optional power supply module



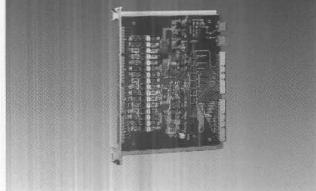
**MSC-60W**  
60W Power Supply Module



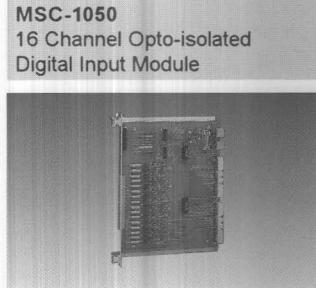
- ◆ Universal input: 90~264VAC
- ◆ UL, CSA, TUV approved
- ◆ 3000VAC isolated input/output
- ◆ Install to MSC-1000/4 or MSC-1000/10 as a external power source for MSC-1000 modules



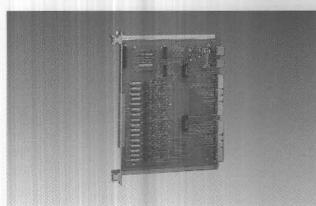
**MSC-1010**  
16 Channel Amplifier/  
Multiplexer Module



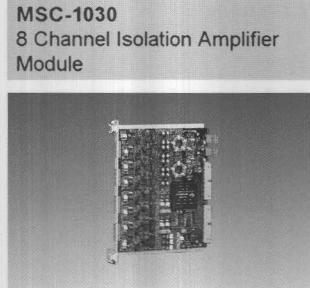
- ◆ 16 ch. multiplexer with programmable gains on each channel
- ◆ Expands up to 256 input channels
- ◆ Software programmable gains up to 2,000
- ◆ Cold-junction compensation circuitry for thermocouple measurement
- ◆ Fully shielded enclosure



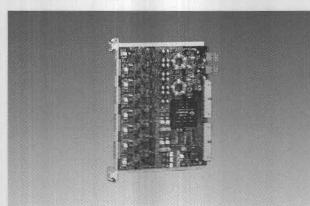
**MSC-1020**  
8 Channel Simultaneous  
Sample & Hold Module



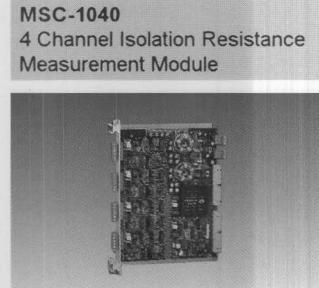
- ◆ 8 differential S&H amplifiers
- ◆ DIP switch selectable gains of 1, 10, 100, 200, 500, 1000
- ◆ Support synchronous or asynchronous operation
- ◆ 10 $\mu$ s acquisition time
- ◆ Fully shielded enclosure



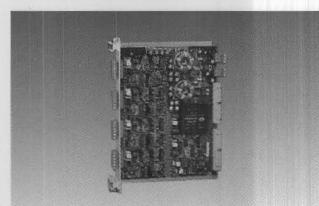
**MSC-1030**  
8 Channel Isolation Amplifier  
Module



- ◆ 8 ch. isolation amplifier
- ◆ 1,500Vrms isolation per channel
- ◆ Jumper selectable gains up to 2,000
- ◆ Filter, CJC included
- ◆ Direct or multiplexing output
- ◆ Fully shielded enclosure

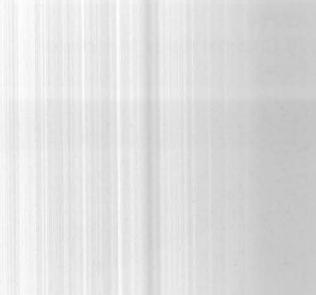


**MSC-1040**  
4 Channel Isolation Resistance  
Measurement Module



- ◆ 4 isolated amplifier channels
- ◆ 4 isolated current and voltage excitation channels
- ◆ 1,500Vrms isolation per channel
- ◆ Jumper selectable gains up to 2,000 per channel
- ◆ Strain gauges, RTDs, Thermistors, mV,  $\mu$ V and V sources measurement

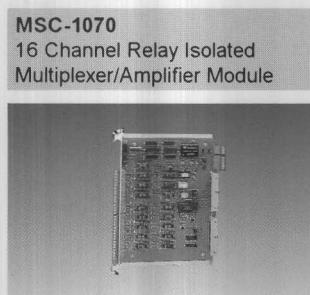
- ◆ 16 optically isolated inputs
- ◆ 2,000Vrms isolation
- ◆ Input range: 3~24VDC
- ◆ Non-polarized opto-isolated
- ◆ Filters included
- ◆ 16 LEDs indicate status of input channels
- ◆ Compatible with AX5220



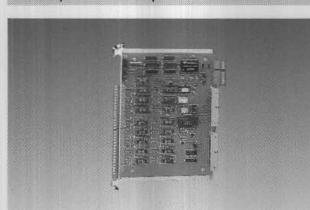
**MSC-1060**  
16 Channel Relay Actuator  
Module



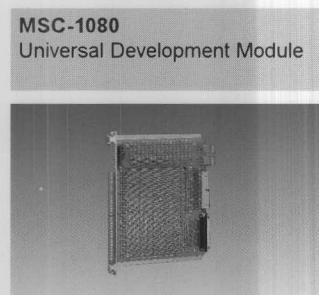
- ◆ 16 electro-mechanical relay
- ◆ 16 LEDs indicate status of relays
- ◆ SPST relays with normally open and common contacts
- ◆ Gold overlay silver contacts rated at 5A 30VDC/250VAC
- ◆ Double isolation up to 2,000 Vrms
- ◆ Compatible with AX5220



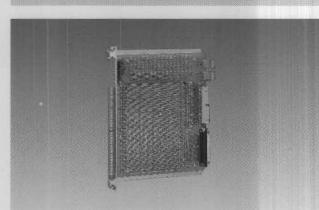
**MSC-1070**  
16 Channel Relay Isolated  
Multiplexer/Amplifier Module



- ◆ 16 DPST electro-mechanical reed relays
- ◆ 16 channel isolated multiplexing
- ◆ Expandable to 4096 input channels
- ◆ Switch selectable gains of 1, 100, 200, 500 and 1,000
- ◆ Cold-junction compensation circuitry for thermocouple measurement



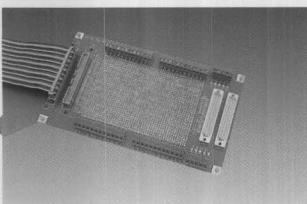
**MSC-1080**  
Universal Development Module



- ◆ Breadboard area for user interface circuit
- ◆ Provides convenient and direct connection to AXIOM data acquisition board
- ◆ Permits easy daisy-chaining to other modules
- ◆ Onboard phoenix headers greatly simplify field wiring

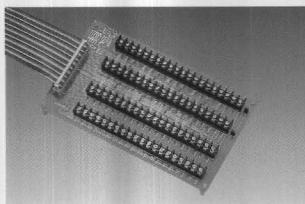
## Terminal & Signal Conditioning

**AX740**  
Universal Development Panel



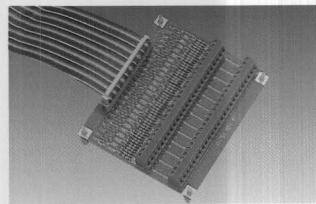
- ♦ Breadboard area for custom user interface circuits
- ♦ Use the breadboard to construct
  - Flowmeter totalizers
  - Filters and amplifier
  - Voltage dividers
  - Analog peak detectors

**AX750**  
General Purpose Screw Terminal Panel



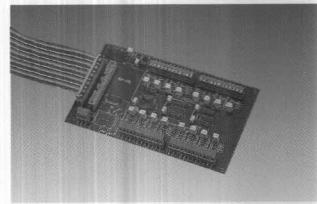
- ♦ Low cost screw terminal panel
- ♦ Extensive passive signal conditioning capabilities
- ♦ Optional onboard cold-junction compensation circuitry for thermocouple measurement
- ♦ Reserved space for signal conditioning functions such as break detector and circuit shunt

**AX751**  
Universal Screw Terminal Panel



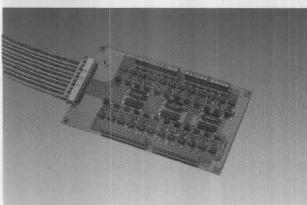
- ♦ Low cost universal screw terminal panel
- ♦ Blank pads accommodate applications such as break-detection, low pass filter, current shunt and voltage attenuator
- ♦ Screw clamp terminal blocks permit reliable connection of signals

**AX752**  
16 Channel Amplifier & Multiplexer Panel



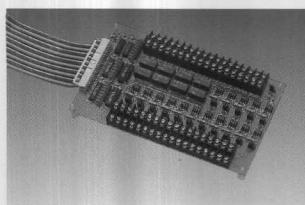
- ♦ 16 Ch. screw terminal amplifier/multiplexer panel
- ♦ Expands to 128 channels
- ♦ Switch selectable gains of 1, 10, 50, 100, 1000
- ♦ Cold-junction compensation circuitry for thermocouple measurement

**AX754**  
24 Channel Opto-isolated D/I Panel



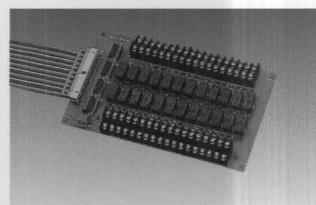
- ♦ 24 opto-isolated D/I channels
- ♦ Thresholds from 3VDC to 24VDC, adjustable by changing current-limit resistors
- ♦ 500V optically isolation
- ♦ LEDs indicate input channel status

**AX755** 8 Channel Relay Output & 16 Channel Opto-isolated D/I Panel



- ♦ 8 single-pole, double-throw relays
- ♦ 125VAC/2A max. contact rating
- ♦ 16 opto-isolated D/I channels
- ♦ Thresholds from 3VDC to 24VDC, adjustable by changing current-limit resistors
- ♦ LEDs indicate input/output channel status

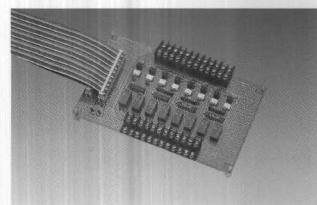
**AX756A/B**  
24 Channel Relay Actuator Panel



- ♦ LEDs indicate input/output channel status
- AX756A**  
24 single-pole, double-throw Form C relays 125VAC/2A max. contact rating
- AX756B**  
24 single-pole, double-throw Form A relay 250VAC/5A max. contact rating

NEW

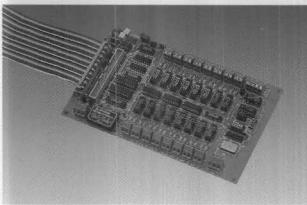
**AX757**  
8 Channel Relay Output & Opto-isolated D/I Panel



- ♦ 8 single-pole, double-throw relays
- ♦ 125VAC/2A max. contact rating
- ♦ 8 opto-isolated D/I channels
- ♦ Thresholds from 3VDC to 24VDC, adjustable by changing current limit resistors
- ♦ LEDs indicate input/output channel status

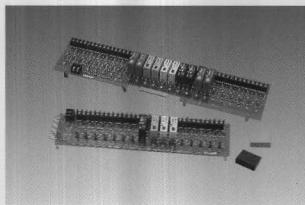
NEW

**AX758**  
16 Channel Relay Multiplexer Panel



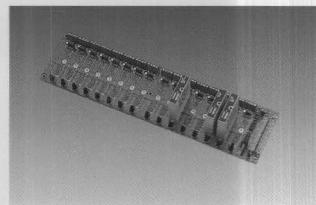
- ♦ Scan, multiplexer or de-multiplexer function
- ♦ 16 channel isolated inputs
- ♦ Up to 16 AX758s can be cascaded for up to 256 channels
- ♦ Cold-junction compensation circuitry for thermocouple measurement

**AX1416/24**  
Solid-state Module Panel & I/O Module



- ♦ 16 & 24 Ch. DC & AC SSR I/O panel
- ♦ Interface with AX5214, AX5215, AX5218, AX5414 & AX2324D
- ♦ High surge current capability
- ♦ Optical isolation

**AX5B16**  
5B Module Carrier Panel



- ♦ Accepts up to 16 modules of mixed types
- ♦ Mountable with AH-RMK 19" Terminal Panel Enclosure
- ♦ Compatible to AX5210, AX5411, AX5412, AX5611, etc.
- ♦ Cascade up to 128 input channels maximum to one A/D board

NEW

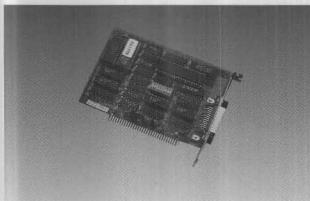
**AX7500**  
19" Rack Mount Kit for Terminal Panel



- ♦ A standard 19" rack mount kit
- ♦ Acrylic plastic with transparent cover
- ♦ Standard 4 units of rack space
- ♦ Available for single- or double-height kits

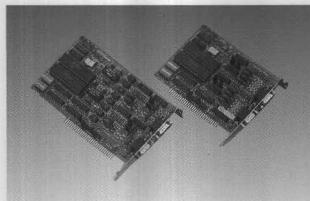
## Communication for IEEE-488, RS-232 & RS-422/485

**AX5488**  
GP-IB Interface Card



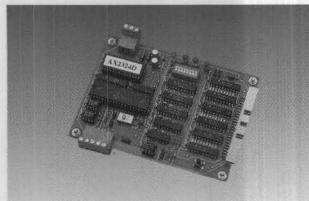
- ◆ Data transfer rate over 300K bytes/sec.
- ◆ Half-sized board fits any I/O slots or laptop PC
- ◆ Selection of 3 DMA channels using host DMA controller

**AX4285A/B**  
Isolated Dual Channel RS-422/485 Interface Card



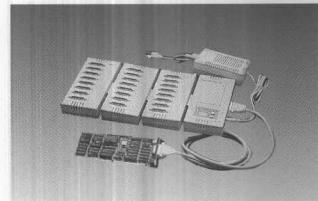
- ◆ Two independent EIA RS-422/485 interface
- ◆ Reliable communication up to 4000 feet at 100K bps
- ◆ Onboard surge absorbers
- ◆ Fully isolated input & output for AX4285A
- ◆ AX4285A+ uses 16550 UART
- ◆ AX4285B+ uses 16550 UART

**AX2324D**  
24 Bit Remote DIO Board



- ◆ 24 bit DIO Programmable
- ◆ Emulates 8255 PPI mode 0
- ◆ Supports RS-485 interface
- ◆ Watchdog timer
- ◆ Emulate Opto-mux protocol

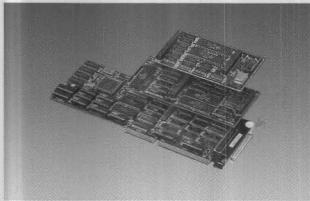
**C320**  
Multiport Card Series



*NEW*

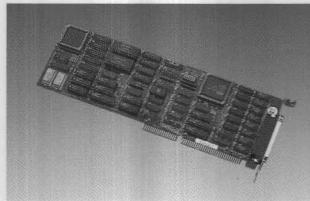
- ◆ Modularized and cascaded 8, 16, 24, 32 RS-232 or RS-422 asynchronous ports
- ◆ Up to 4 control cards for a total 128 ports per system
- ◆ Throughput up to 38400 bps with 16 ports, 19200 bps with 32 ports simultaneously
- ◆ Support DOS, UNIX (OS2 option) and Windows device driver

**C204**  
4-port Intelligent Sync/Async Card



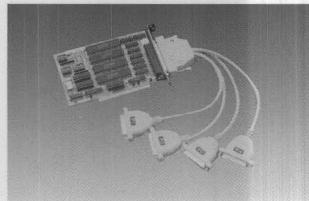
- ◆ 4 Synchronous/asynchronous ports
- ◆ 2 × 8530 UART
- ◆ Up to 4 cards for a total 16 ports in one system
- ◆ User download program for protocol development
- ◆ Support DOS device driver

**C218**  
High Performance 8-port Intelligent Async Card



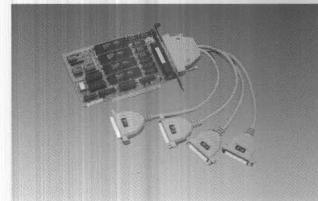
- ◆ 8 RS-232 or RS-422 asynchronous ports
- ◆ 1 × CD180 UART
- ◆ Support RS232 interface: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
- ◆ Support DOS (API-232), UNIX and Windows device driver (Option OS2)
- ◆ Up to 4 cards for a total 32 ports in one system

**C104**  
4-port RS-232 Card



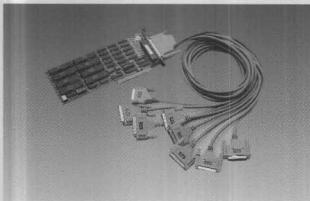
- ◆ 4 RS-232 asynchronous ports
- ◆ 4 × 16450 UART
- ◆ Baud rate up to 57,600 bps
- ◆ Compatible with SCO UNIX/XENIX
- ◆ Support DOS (API-232) device driver

**C104+**  
4-port 16550 RS-232 Card



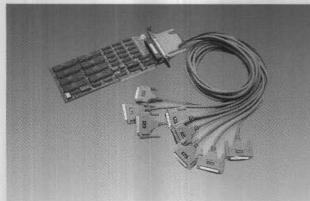
- ◆ Identical with C104, but the 16450 UART chip are replaced by the 16550 which has 16 bytes FIFO inside
- ◆ 16550 is pin to pin compatible with 16450
- ◆ Suitable for high speed and multi-tasking applications

**C128**  
8-port Async Card



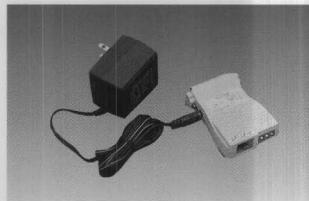
- ◆ 8 RS-232 or RS-422 asynchronous ports
- ◆ 8 × 16450 UART
- ◆ Support RS-232 interface: TxD, RxD, RTS, CTS, DSR, DTR, DCD, GND
- ◆ Up to 2 cards for a total 16 ports in one system
- ◆ Compatible with SCO UNIX/XENIX, CDOS, PICK

**C128+**  
8-port 16550 Async Card



- ◆ Identical with C128, but the 16450 UART chip are replaced by the 16550 which has 16 bytes FIFO inside
- ◆ 16550 is pin to pin compatible with 16450
- ◆ Suitable for high speed and multi-tasking applications

**IC-485S**  
RS-232 to RS-422/485 Converter



- ◆ Controlled by RTS selectable
- ◆ DCE/DTE selectable
- ◆ Point to Point/Multidrop link selectable
- ◆ 4-wire full duplex/2-wire half duplex
- ◆ Distance up to 4000 feet (1.2Km)

**IC-12**  
RS-232 to Current Loop Converter

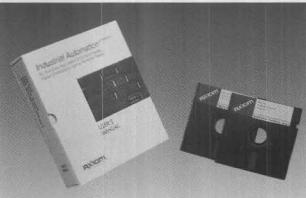


- ◆ DTE/DCE selectable
- ◆ Two pairs, Full-duplex
- ◆ Transmit active
- ◆ Receive passive
- ◆ Monitor/Simulate selectable
- ◆ Up to 19200 bps

## Application Software Package

### AS59000

Real-Time Graphs Data Acquisition Software



- ◆ Real-time graphic display
- ◆ On-line display data on user graphic screen
- ◆ Data can be stored to disk on time interval
- ◆ Acquired data can be converted into Lotus 1-2-3 format

### AS59001

PC-Based Oscilloscope Software



- ◆ Emulating digital storage oscilloscope
- ◆ Support 16 channels of data acquisition, up to 4 channels display
- ◆ Up to 100KHz sampling rate
- ◆ Up to 5KHz real-time data acquisition speed

### AS59002

High Speed Data Streaming to Disk



- ◆ Store file in binary format for highest density
- ◆ Provides Lotus 1-2-3 conversion function
- ◆ Pretest file storing rate to prevent overrun or lost data
- ◆ Stores to max. space available on disk

### AS59120

Real-Time VISION Windows Professional System



- ◆ Build-in Windows DDE feature
- ◆ Display dynamic realtime
- ◆ Data update rate: upto 10 DDE message/sec.
- ◆ Print screen at any time
- ◆ Can use with LTN, LTC

### AS59100

LABTECH NOTEBOOK (LTN)



- ◆ Icon and menu-driven software for real time data acquisition, control & analysis
- ◆ Real-time process control: Open/Closed loop control
- ◆ Advanced non-linear curve fitting
- ◆ Forward and Inverse Fast Fourier Transform (FFT)
- ◆ Includes DOS and Windows versions

### AS59110

LABTECH CONTROL (LTC)



- ◆ Real-time animation of process diagrams with a variety of display types, including SPC charts, trendlines, variable 1 vs. variable 2 bar graphs, digital meters, and faceplates.
- ◆ Comprehensive control functions including PID, alarm, bang-bang control, etc.

### AS59400

Visual Designer

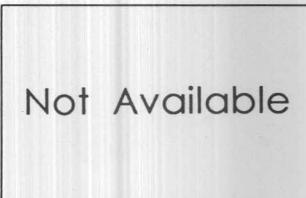


- ◆ Graphical, block-diagram development environment: requires no programming
- ◆ Control-sensitive, on-line-help
- ◆ Realtime data display and controls
- ◆ Support RS232/RS422/RS485, IEEE-488 communications
- ◆ Dynamic Data Exchange (DDE) with other Windows program

*NEW*

### AS59500

Wonderware InTouch



*Not Available*

- ◆ Animated graphics application generator for industrial process control, data acquisition, manufacturing automation
- ◆ Fast DDE capability when used with Wonderware's DDE Server
- ◆ Alarm system with 999 priorities
- ◆ Provide graphic tool and editor

### AS59200

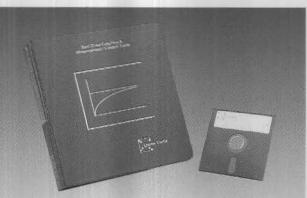
Snap-Master



- ◆ Integrated or separated software packages for data acquisition, general analysis and frequency analysis
- ◆ Expandable and flexible for a variety of applications
- ◆ Easy to learn, familiar Graphical User Interface
- ◆ No programming

### AS59300

Real-Time Graphics Tools



- ◆ Scrolling Graph Types
- ◆ Royalty-free when used to create application programs
- ◆ All functions are supplied in compiled libraries and in source code

### AS59310

Science and Engineering Tools



- ◆ Science/Engineering charting routines
- ◆ 3-D plotting-translation, scaling, rotation, and perspective routines
- ◆ Statistics-mean, mode, standard deviation, standard error etc.
- ◆ Curve fitting-polynomial and cubic splines

## Industrial Workstation, Industrial Computer Chassis

**AX6350**  
Low Cost Flat Panel  
Workstation



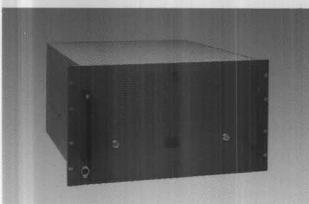
- ◆ Either 8.5" LCD B/W or 640x400 EL display
- ◆ EIA 19" rack mount chassis
- ◆ Sealed membrane control and data entry keypads
- ◆ 14-slot PC/AT passive backplane, 300W power supply
- ◆ Space for one 5.25" drive and two 3.5" drives

**AX6270**  
Industrial Workstation with 9"  
Color DSTN Display



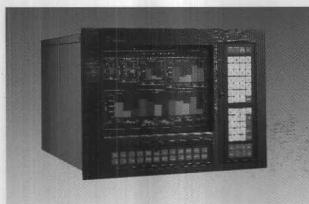
- ◆ 9" solid-state thin-film color DSTN display
- ◆ Hard coating treatment of front panel meets NEMA 4/12
- ◆ 8-slot PC/AT passive backplane
- ◆ Space for one 3.5" FDD & one 3.5" HDD
- ◆ 19" rack or panel mount

**AX6158**  
20-slot Industrial Computer  
Chassis



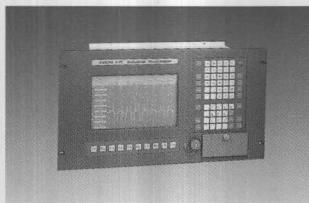
- ◆ EIA 19" rack mount chassis
- ◆ 20-slot PC/AT compatible passive backplane
- ◆ Dual segmentation option
- ◆ 350W power supply meets the 20-slot large control system requirement
- ◆ Up to 4 drives to be located in the lower half of chassis

**AX6355A/AT**  
Industrial Workstation with 14"  
Color VGA Display



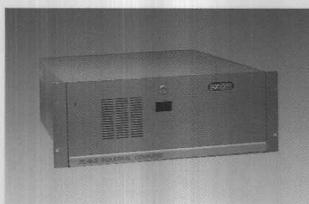
- ◆ PHILIPS 14" color VGA monitor, 1024x768
- ◆ Hard coating treatment of front panel meets NEMA 4/12
- ◆ Sealed membrane keypads fully compatible with standard PC/AT keyboard
- ◆ Touch screen panel designed for easy-touch operation (optional)

**AX6260**  
Industrial Workstation with 9"  
EL Display



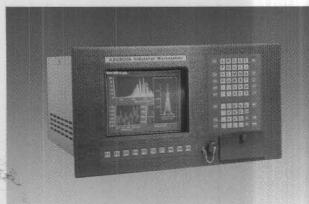
- ◆ 9" Electroluminescent (EL) flat-panel display 640x400 pixel resolution, Hercules display mode
- ◆ Hard coating treatment of front panel meets NEMA 4/12
- ◆ 8-slot PC/AT passive backplane
- ◆ Sealed membrane keypads compatible with standard PC/AT keyboard
- ◆ 19" rack or panel mount

**AX6152**  
Slide-out 12-slot Industrial  
Computer Chassis



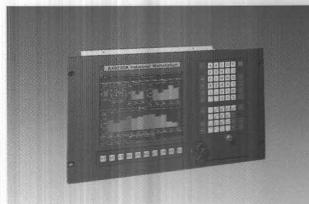
- ◆ EIA 19" rack mount chassis
- ◆ 12-slot PC/AT compatible passive backplane
- ◆ 250W power supply
- ◆ Slide-out construction for easy assembly, testing and maintenance
- ◆ Shock mounted disk drive bay
- ◆ Space for three half-height drives and one 1" height HDD

**AX6250A**  
Industrial Workstation with 9"  
VGA CRT Display



- ◆ IBM/VGA compatible 9" color monitor
- ◆ Sealed membrane keypads fully compatible with standard PC/AT keyboard
- ◆ Hard coating treatment of front panel meets NEMA 4/12
- ◆ 7-slot PC/AT passive backplane
- ◆ Space for one 3.5" FDD & one 3.5" HDD
- ◆ 19" rack or panel mount

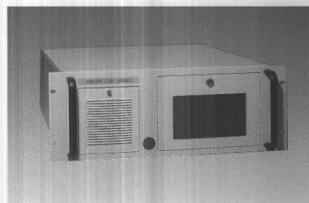
**AX6280**  
Industrial Workstation with 9"  
color TFT Display



- ◆ 9" solid-state thin-film color TFT display
- ◆ Touch screen panel designed for easy-touch operation (optional)
- ◆ Hard coating treatment of front panel meets NEMA 4/12
- ◆ 8-slot PC/AT passive backplane
- ◆ Space for one 3.5" FDD & one 3.5" HDD
- ◆ 19" rack or panel mount

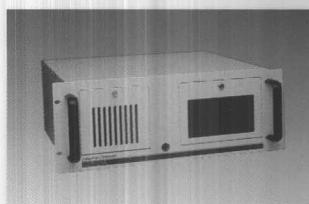
*NEW*

**AX6155W**  
Industrial Computer Chassis  
(Industrial Light Gray)



- ◆ EIA 19" rack mount chassis
- ◆ 14-slot PC/AT compatible passive backplane
- ◆ 300W power supply
- ◆ Shock mounted disk drive bay
- ◆ EMI meets FCC/FTZ class A
- ◆ Environmental test approval
- ◆ Space for three half-height drives and one 1" height HDD

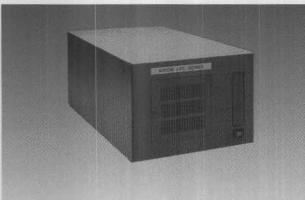
**AX6150A**  
12-slot Industrial Computer  
Chassis



- ◆ EIA 19" rack mount chassis
- ◆ 12-slot PC/AT compatible passive backplane
- ◆ 300W power supply
- ◆ Shock mounted disk drive bay
- ◆ Space for two 3.5" drives & one 3.5" HDD

## Industrial Workstation, Industrial Computer Chassis

**AX6055A**  
PC Node/Wall-Mounted  
Chassis



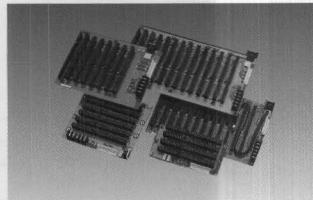
- ◆ 8-slot PC/AT compatible passive backplane & baby AT mother board
- ◆ 150W power supply
- ◆ Drive bay for mounting one 3.5" FDD & one 3.5" HDD
- ◆ Hold-down clamp to protect the plug-in cards against vibration

**AX6050B**  
PC Node/Wall-Mounted  
Chassis



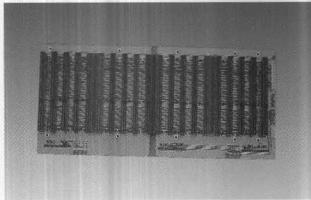
- ◆ Compact size for versatile panel or table mount
- ◆ 6-slot PC/AT compatible passive backplane
- ◆ Drive bay for mounting one 3.5" FDD & one 3.5" HDD
- ◆ Hold-down clamp to protect the plug-in cards against vibration

**AX6020/4, 6, 8, 12, 14**  
Passive Backplane



- ◆ For flexible installation inside customer chassis
- ◆ 4 layer backplane, 4, 6, 8, 12, 14 AT expansion slots

**AX6020/20S**  
Segmented 20-slot Passive  
Backplane



- ◆ Permits "splitted" the backplane into as many as four sections by linker modules
- ◆ Dual power connector for two independent system
- ◆ LED power indicators for +5V, +12V, -5V, -12V
- ◆ Dual resistor termination sockets for pull-up, dull-down, line termination, selectable by the user

**AX7010K**  
Waterproof Keyboard



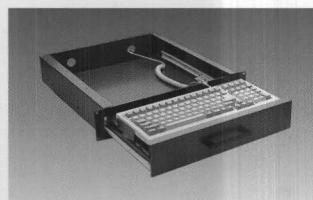
- ◆ Temperature of waterproof -40~150 C
- ◆ Washable with running water
- ◆ Mechanical key-switch (Cherry)
- ◆ Gold wire crossbar contacts ensure long life expectancy

**AX7020K**  
Rack-Mounted Membrane  
Keyboard



- ◆ 19" rack mount membrane keyboard
- ◆ 101 keys, IBM PC/AT compatible
- ◆ Environmentally protected switch contacts and electronics
- ◆ Liquid-proof and dust-proof
- ◆ Hard coated polycarbonate graphics

**AX7030K**  
Keyboard Drawer with Compact  
Keyboard



- ◆ 19" rack mount drawer can meet the EIA RS-310C standard
- ◆ 2 rack unit high at 3.5"
- ◆ 101 keys, IBM PC/XT/AT fully compatible
- ◆ Permanently attached coiled cord with 5-pin DIN connector

**AX7040K**  
Keyboard Drawer with Compact  
Keyboard



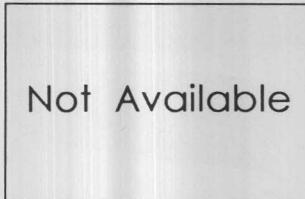
- ◆ 19" rack mount drawer can meet the EIA RS-310C standard
- ◆ 1 rack unit high at 1.75"
- ◆ 101 keys, IBM PC/XT/AT fully compatible
- ◆ Heavy duty steel construction
- ◆ Keyboard usable without lifting out of drawer
- ◆ Painted in "Gray Texture" & "Industrial Light Gray" to match AX6155B & AX6155W

**AX6165KB/KW**  
Universal Rack-Mounted  
Monitor Enclosure



- ◆ Universal solution for rack-mounted most 12" to 14" monitors
- ◆ 19" EIA RS-310C rack mount standard
- ◆ Painted in "Gray Texture" & "Industrial Light Gray" to match AX6155B & AX6155W
- ◆ Shipping size (disassembles): 530x160x540mm<sup>3</sup> (WxHxD)

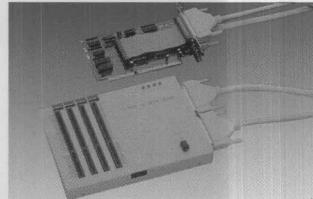
**AX6180**  
Industrial Rack Mounted  
14" SVGA Monitor



**Not Available**

- ◆ Meets EIA 19" rack mount monitor
- ◆ Built around an 14" non-interlaced SVGA monitor with 1024x768 resolution
- ◆ Front panel either with or without the touch screen installed
- ◆ AC input: 100~240VAC auto range

**AX6025E**  
PC/XT/AT Bus Extension  
Protector

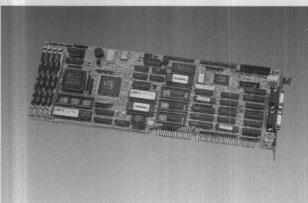


- ◆ The interface cards applied on the AX6025E can be inserted/removed while computer power on
- ◆ One 75cm 62P/36P cable and connector
- ◆ Four sets of power indicator and current limit fuse
- ◆ Power switch can cut off on the AX6025E

## Single Board Computer, RAM/ROM Disk

**AX8015B**

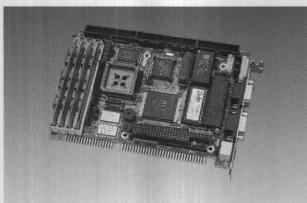
Embedded PC/AT286  
All-in-one CPU Card



- ◆ 80C286-16MHz CPU
- ◆ 2S, 1P, 2 FDD, 2 HDD (IDE) drives
- ◆ ROM Disk A:  
EPROM: 128K up to 1MB  
Flash: 128K up to 512KB
- ◆ RAM Disk B:  
SRAM: 128KB

**AX8025H/386**

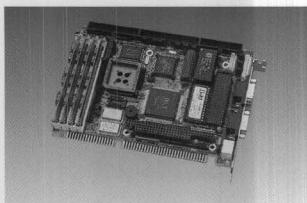
PC/AT386SX  
All-in-one CPU Card



- ◆ Intel 80386SX-40MHz CPU
- ◆ 2S, 1P, 2 FDD, 2 HDD (IDE) drives
- ◆ Watchdog timer can be set by 1 or 10 sec.
- ◆ PC/104 expansion bus
- ◆ Onboard power good signal
- ◆ P9 structure

**AX8025H/486**

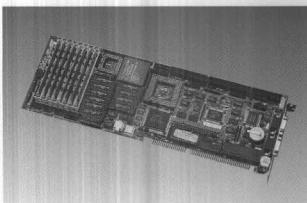
PC/AT486SLC  
All-in-one CPU Card



- ◆ Cyrix 486SLC-33MHz CPU
- ◆ 2S, 1P, 2 FDD, 2 HDD (IDE) drives
- ◆ Watchdog timer can be set by 1 or 10 sec.
- ◆ PC/104 expansion bus
- ◆ Onboard power good signal
- ◆ P9 structure

**AX80U86/386**

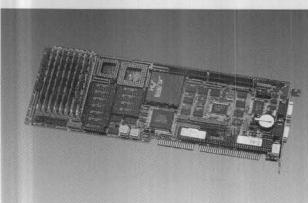
PC/AT386DX Cache  
All-in-one CPU Card



- ◆ 80386DX CPU
- ◆ 2S, 1P, 2 FDD, 2 HDD (IDE) drives
- ◆ Watchdog timer can be set by 500ms or 1 sec.
- ◆ 256K cache memory

**AX80U86/486**

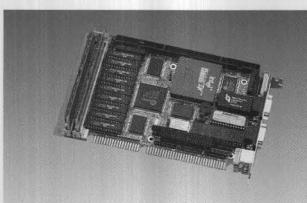
PC/AT486 Cache  
All-in-one CPU Card



- ◆ 80486SX/DX/DX2 CPU
- ◆ 2S, 1P, 2 FDD, 2 HDD (IDE) drives
- ◆ Watchdog timer can be set by 500ms or 1 sec.
- ◆ 256K cache memory

**AX8035H**

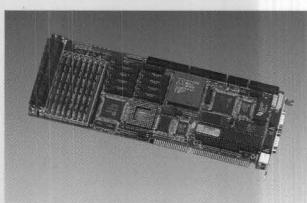
Half-sized PC/AT486  
All-in-one CPU Card



- ◆ 80486SX/DX/DX2 CPU
- ◆ 2S, 1P, 2 FDD, 2 HDD (IDE) drives
- ◆ Watchdog timer can be set from 0.5 to 150 sec.
- ◆ PC/104 expansion bus
- ◆ Onboard clock generator
- ◆ 256K cache memory

**AX8045**

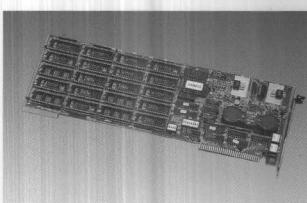
PC/AT486 All-in-one CPU Card  
W/ Local Bus VGA



- ◆ 80486SX/DX/DX2/DX4 CPU
- ◆ 2S, 1P, 2 FDD, 2 HDD (IDE) drives
- ◆ Local bus VGA & IDE
- ◆ Watchdog timer can be set from 0.5~300sec.
- ◆ PC/104 expansion bus
- ◆ Onboard clock generator
- ◆ Onboard 256 cache memory, up to max. 1MB

**AX8012**

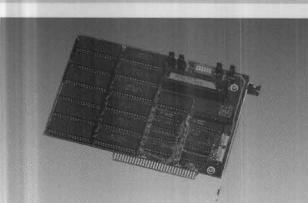
High Capacity RAM/ROM Disk



- ◆ Two memory banks:
  - 1st bank: up to 1.2MB SRAM or EPROM
  - 2nd bank: up to 1.2MB SRAM
- ◆ Watchdog timer, battery backup for CMOS SRAM
- ◆ Onboard EPROM writer

**AX8013C**

Half-sized Dual Drives  
Flash/RAM/ROM Disk Card

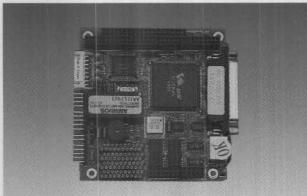


- ◆ Two memory banks:
  - 1st bank: up to 3MB SRAM, EPROM or Flash
  - 2nd bank: up to 3MB SRAM, EPROM or Flash
- ◆ Provides up to 6MB memory size with both banks linked together
- ◆ Bank data is protected from illegal access by hardware
- ◆ Watchdog timer with selectable timeout (100ms or 1.6 sec.)
- ◆ High capacity Li battery (3.6V, 1.8Ahr) for backup SRAM

## PC/104 Expansion Module



**AX10401/386**  
386SX-40 CPU Module



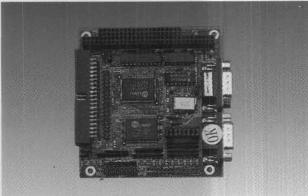
- ♦ Compact form-factor meets the PC/104 standard
- ♦ Low power consumption
- ♦ 386SX-40MHz CPU
- ♦ Onboard 2MB DRAM
- ♦ Dallas RTC battery

**AX10401/486**  
486SLC2-50 CPU Module



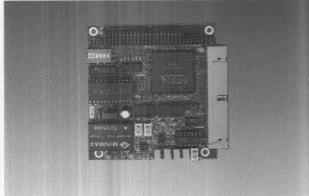
- ♦ Compact form-factor meets the PC/104 standard
- ♦ Low power consumption
- ♦ 486-SLC2-50MHz CPU
- ♦ Onboard 2MB DRAM
- ♦ Dallas RTC battery

**AX10405**  
Super I/O Module



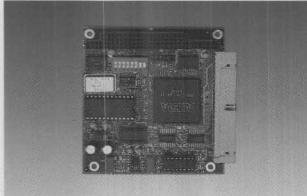
- ♦ Support watchdog timer
- ♦ 2 floppy disk controller
- ♦ 2 IDE hard disk controller
- ♦ 2 serial and 1 parallel port

**AX10410**  
High Speed Data Acquisition Module



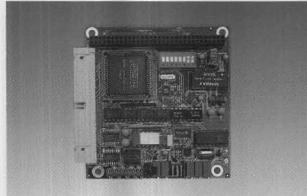
- ♦ Compatible with Keithley Metrabyte DAS-16G
- ♦ 16 S.E./8 DI. A/D with 12-bit resolution
- ♦ Up to 90KHz sampling rate through DMA mode operation
- ♦ 2 channels of 12-bit D/A output
- ♦ 8 bits of TTL/DTL compatible DIO

**AX10411**  
Low Cost Analog Input Module



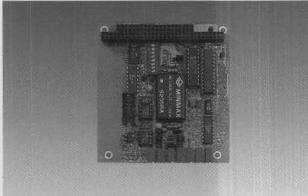
- ♦ 16 S.E. A/D with 12-bit resolution
- ♦ Up to 12.5KHz sampling rate for PC/XT/AT, interrupt support
- ♦ Programmable pacer clock can be used to initiate repeated conversions
- ♦ 8 bits of TTL/DTL compatible DIO

**AX10412**  
16 Channel Temp./Voltage Measurement Module



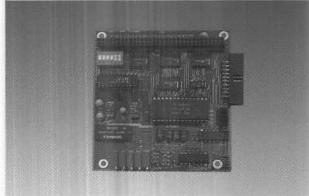
- ♦ 16 channels of thermocouple and voltage measurement
- ♦ Very high precision integrating V/F converter
- ♦ Programmable 12-bit or 16-bit resolution
- ♦ 0.01°C minimum temperature resolution through 16-bit mode and use K type thermocouple
- ♦ Onboard cold-junction compensation circuitry

**AX10415**  
2 Channel Analog Output Module



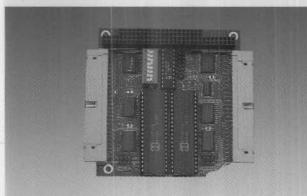
- ♦ 2 channels analog output module
- ♦ 0 to 5V, 0 to 10V, -2.5V to +2.5V, -5V to +5V, -10V to +10V or 4 to 20mA output range
- ♦ 12-bit resolution
- ♦ +5VDC single power operation

**AX10416**  
4 Channel Analog Output Module



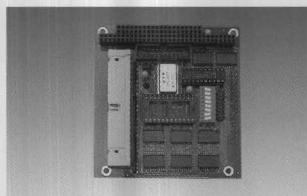
- ♦ 4 channels analog output module
- ♦ 0 to 5V, 4 to 20mA output range
- ♦ 12-bit resolution

**AX10420**  
48 Bit DIO Module



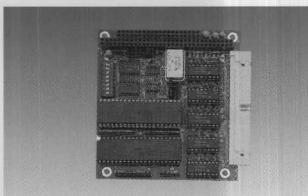
- ♦ 48 TTL/ DTL compatible digital I/O lines arranged into 8-bit ports
- ♦ Emulates 8255 PPI mode 0
- ♦ Software programmable for inputs/outputs

**AX10424**  
24 Bit DIO and 3 Channel Counter/Timer Module



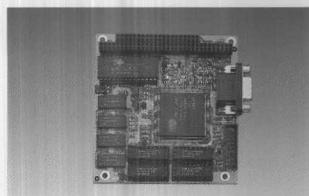
- ♦ 24 TTL/DTL compatible digital I/O lines arranged into three 8-bit groups
- ♦ Emulates 8255 PPI mode 0
- ♦ Software programmable for inputs/outputs
- ♦ Three programmable counter/timer channels

**AX10425**  
5/10 Channel Counter/Timer Module



- ♦ One/two AMD9513A provides five 16-bit counter/timers
- ♦ High speed counting rate up to 7MHz
- ♦ Selectable interrupt input channel
- ♦ Counter/timer input protection ( $\pm 12V$ )

**AX10430**  
Super VGA Display Controller Module

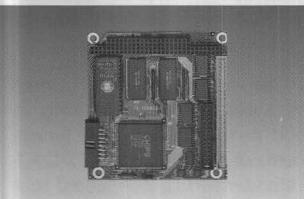


- ♦ All the capabilities of IBM's PS/2 VGA display adapter
- ♦ A 16-bit PC/104 bus interface for high speed display memory access
- ♦ Onboard 1MB DRAM
- ♦ Supports extensive graphics mode from 640x480 to 1280 x 1024 resolution



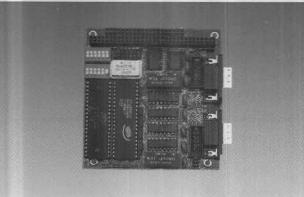
## PC/104 Expansion Module

**AX10431**  
Flat Panel and CRT Display  
Module



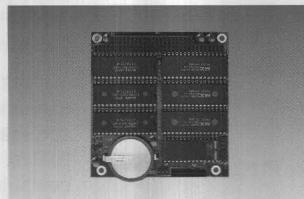
- ♦ Fully compatible with IBM™ VGA standards
- ♦ 16 bits PC/104 bus interface and operation
- ♦ Up to 1MB display memory
- ♦ Low power, ultra compact, highly reliable and rugged
- ♦ Highly performance through zero wait state
- ♦ Support all type of display panel

**AX10445A/B**  
Isolated Dual Channel RS-422/  
485 Interface Module



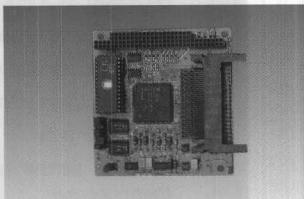
- ♦ Two independent EIA RS-422/485 interface
- ♦ Reliable communication up to 4000 feet (1.2Km) at 100K bps
- ♦ Support TX, RX, RTS and CTS signals
- ♦ fully isolated input and output for AX10445A

**AX10435**  
Dual Drive Flash/EPROM/  
SRAM Disk Module



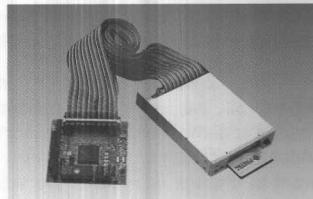
- ♦ Two memory banks for Flash/EPROM/SRAM up to 1.44MB
- ♦ Battery backup for CMOS SRAM
- ♦ Utility software included
- ♦ Both banks linked together up to 2.88MB
- ♦ Up to 5 modules mapped together up to 7.2MB per bank

**AX10440A**  
IC Memory Card Carrier Module



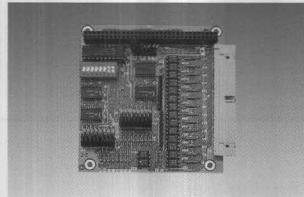
- ♦ Supports Flash and SRAM IC memory card
- ♦ Auto-bootable when setting at drive A:
- ♦ Supports PCMCIA V2.0/JEIDA 4.1 standard
- ♦ Operates with CardTalk software package

**AX10440E**  
IC Memory Card Carrier Module  
with External Ejector



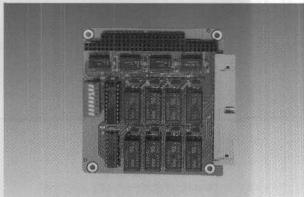
- ♦ Supports Flash and SRAM IC memory card
- ♦ Easy removal for memory card with ejector connector (only for AX10440E)
- ♦ Auto-bootable when setting at drive A:
- ♦ Supports PCMCIA V2.0/JEIDA 4.1 standard
- ♦ Operates with CardTalk software package

**AX10450**  
16 Channel Opto-isolated Digital  
Input Module



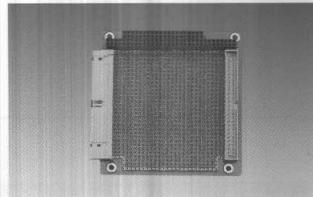
- ♦ 16 channels opto-isolated input
- ♦ Isolation up to 1000 Vrms
- ♦ Filter circuit included
- ♦ Wide input range

**AX10455**  
8 Channel Relay Actuator  
PC/104 Module



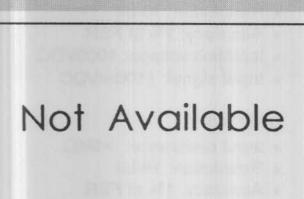
- ♦ 8 single-pole, double-throw relays
- ♦ 125VAC/1.5A maximum contact rating
- ♦ Isolation upto 1000 Vrms
- ♦ NC, NO and COM contacts output
- ♦ LED indicators to show activated relays

**AX10460**  
Universal Module



- ♦ PC/104 breadboard
- ♦ For custom user interface circuits
- ♦ Stackthrough PC/104 connector
- ♦ 50-pin mating connector

**AX10465**  
Ethernet Module



Not Available

- ♦ Compatible with IEEE 802.3
- 10Base-2 and 10Base-T Ethernet standards
- ♦ 10M bits/sec. network transfer rate
- ♦ NS83902 LAN controller will be chosen
- ♦ Driver meet NE1000/NE2000 requirement

## **BITlink Module Series**

BITlink is the FIELDBUS system for an always changing industry. The BITlink cable is a standard 2-wire cable, used for both POWER SUPPLY and COMMUNICATION between every BITlink components connected to the cable.

This 2-wire FREEWAY is placed where all the signal is generated, that means together with the sensor's in the industrial process. And every time you want to change or expand the system, just add more cable or more BITlink components.

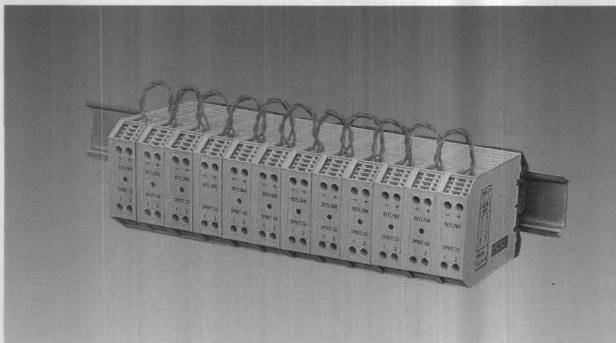
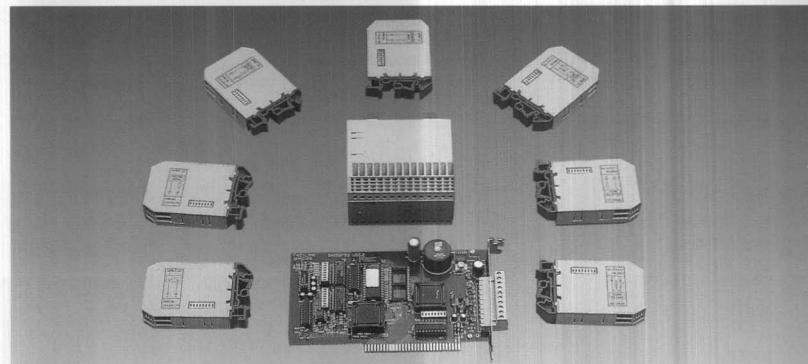
A normal BITlink installation consists of a external BITlink Power Supply or internal FASTlink Interface Card, and to this the BITlink cable is connected. The cable can be up to 2000m in length and more than one cable segment can be connected to the Power Supply at the same time. The maximum cable connected to the Power Supply is 10000m.

The BITlink family have modules for every purpose like:

- ◆ Isolation analog inputs with 12 or 16-bit A/D
- ◆ Signal range is  $\pm 10\text{mVDC} \sim 10\text{VDC}$ ,  $0\sim 20\text{mA} / 4\sim 20\text{mA}$
- ◆ Isolation analog outputs with 12-bit D/A
- ◆ Digital inputs with or without isolation
- ◆ Digital outputs with Relay or Triac output
- ◆ Counter inputs
- ◆ Isolation sensor inputs for Pt100/Pt1000/ thermocouple

The application program can be any form for High-level language or it can be easy to use GRAPLC.EXE for MAN/MACHINE interface. Another package, SOFTPLC is used to download custom process.

BITlink is a two-wire data transmissions system for easy cabling in acquisition and control system. A typical BITlink system is made of a PC/AT computer or standard PLC, connected to a two-wire cable. And up to 256 BITlink modules are connected to this cable for data acquisition or control.



### Digital Input

#### **DPBIT20**

- ◆ Input resistance:  $> 12\text{K}\Omega$
- ◆ Dry contact input:
- 5VDC Internal voltage supply
- ◆ Frequency range: DC to 5Hz
- ◆ Input mode:
- Logic "0": Input close
- Logic "1": Input open

#### **DPBIT22**

- ◆ Input resistance:  $12\text{K}\Omega$
- ◆ Dry contact input:
- 5VDC Internal voltage supply
- ◆ Input signal:
- 6~24VDC or 12~24VAC
- ◆ Input mode:
- Logic "0": Input close
- Logic "1": Input open
- ◆ Frequency range: DC to 5Hz
- ◆ Isolation voltage: 1000VAC/DC

#### **DPBIT50**

- ◆ Digital input channel: 8
- ◆ Input resistance:  $12\text{K}\Omega$
- ◆ Dry contact input:
- 5VDC Internal voltage supply
- ◆ Input mode:
- Logic "0": Input close
- Logic "1": Input open

#### **DPBIT51**

- ◆ Digital input channel: 8
- ◆ Input resistance:  $12\text{K}\Omega$
- ◆ Input signal: 6~24VDC or 12~24VDC
- ◆ Input mode:
- Logic "0": No input
- Logic "1": Input
- ◆ Frequency range: DC to 5Hz
- ◆ Isolated voltage: 1000VAC/VDC

### Analog Input

#### **DPBIT27**

- ◆ Input resistance:  $> 1\text{M}\Omega$
- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR
- ◆ Isolation voltage: 1000VDC
- ◆ Input signal:  $\pm 10\text{mVDC}$

#### **DPBIT28**

- ◆ Input resistance:  $250\Omega$
- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR
- ◆ Isolation voltage: 1000VDC
- ◆ Input signal: 0~20mADC

#### **DPBIT29**

- ◆ Input resistance:  $> 1\text{M}\Omega$
- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR
- ◆ Isolation voltage: 1000VDC
- ◆ Input signal: 4~20mADC

#### **DPBIT60**

- ◆ Input resistance:  $> 1\text{M}\Omega$
- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR
- ◆ Isolation voltage: 1000VDC
- ◆ Input signal:  $\pm 10\text{VDC}$

#### **DPBIT61**

- ◆ Input resistance:  $> 1\text{M}\Omega$
- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR
- ◆ Isolation voltage: 1000VDC
- ◆ Input signal:  $\pm 1\text{VDC}$

#### **DPBIT62**

- ◆ Input resistance:  $> 1\text{M}\Omega$
- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR
- ◆ Isolation voltage: 1000VDC
- ◆ Input signal:  $\pm 100\text{mVDC}$

#### **DPBIT63**

- ◆ Input resistance:  $> 1\text{M}\Omega$
- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR
- ◆ Isolation voltage: 1000VDC
- ◆ Input signal:  $\pm 10\text{mVDC}$

#### **DPBIT64**

- ◆ Input resistance:  $> 1\text{M}\Omega$
- ◆ Resolution: 16-bit
- ◆ Accuracy: 1% of FSR
- ◆ Isolation voltage: 1000VDC
- ◆ Input signal:  $\pm 100\text{mVDC}$

#### **DPBIT65**

- ◆ Input resistance:  $> 1\text{M}\Omega$
- ◆ Resolution: 16-bit
- ◆ Accuracy: 1% of FSR
- ◆ Isolation voltage: 1000VDC
- ◆ Input signal:  $\pm 30\text{mVDC}$

#### **DPBIT66**

- ◆ Input resistance:  $> 1\text{M}\Omega$
- ◆ Channel: 8
- ◆ Resolution: 16-bit
- ◆ Accuracy: 1% of FSR
- ◆ Isolation voltage: 1000VDC
- ◆ Input signal: 0~15VDC

## BITlink Module Series

### Temperature/Thermocouple

#### DPBIT30

- ◆ Temperature sensor input
- ◆ Temperature range: -20 to 50°C
- ◆ Resolution: 8-bit
- ◆ Accuracy: 1% of FSR

#### DPBIT31

- ◆ Pt100 temperature sensor input
- ◆ Sensor temperature range: -20 to 50 °C
- ◆ Resolution: 8-bit
- ◆ Accuracy: 1% of FSR

#### DPBIT32

- ◆ Pt1000 temperature sensor input
- ◆ Sensor temperature range: -20 to 50°C
- ◆ Resolution: 8-bit
- ◆ Accuracy: 1% of FSR

#### DPBIT34

- ◆ Pt100 temperature sensor input
- ◆ Temperature coefficient: 0.00395
- ◆ Resolution: 12-bit
- ◆ Sensor temperature range: -100 to 600 °C
- ◆ Accuracy: 1% of FSR

#### DPBIT35

- ◆ Pt100 temperature sensor input
- ◆ Temperature coefficient: 0.00392
- ◆ Sensor temperature range: -100 to 600 °C
- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR

#### DPBIT33

- ◆ Sensor temperature range: J, K, T type
- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR

### Digital Output

#### DPBIT40

- ◆ Relay output
- ◆ Switch rate for relay output: 5Hz
- ◆ Output: Dry contact for switching up to 24VDC/0.5A

#### DPBIT41

- ◆ 4 channel relay output
- ◆ Switch rate: 5Hz
- ◆ Output: Dry contact for switching up to 24VDC/0.5A

#### DPBIT44

- ◆ 4 channel Triac output
- ◆ Switch rate: 5Hz
- ◆ Output: Triac for switching up to 220VAC/0.5A

#### DPBIT45

- ◆ Triac output
- ◆ Switch rate for relay output: 5Hz
- ◆ Output: Triac for switching up to 220VAC/0.5A

### Analog Output

#### DPBIT47

- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR
- ◆ Sample rate: 0.2Hz
- ◆ Output: 0~10VDC
- ◆ Max. load: 1KΩ
- ◆ Isolation voltage: 1000VDC

#### DPBIT48

- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR
- ◆ Sample rate: 0.2Hz
- ◆ Output: 0~20mA
- ◆ Max. load: 1KΩ
- ◆ Isolation voltage: 1000VDC

#### DPBIT49

- ◆ Resolution: 12-bit
- ◆ Accuracy: 1% of FSR
- ◆ Sample rate: 0.2Hz
- ◆ Output: 4~20mA
- ◆ Max. load: 1KΩ
- ◆ Isolation voltage: 1000VDC

### Counter/Timer

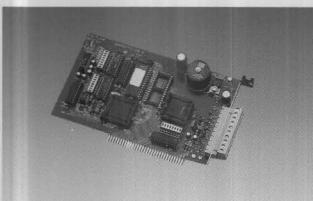
#### DPBIT70

- ◆ 16-bit Up/Down counter
- ◆ Input resistance: 12KΩ
- ◆ Input signal: 6~24VDC
- ◆ Max. counting: 65535
- ◆ Isolation voltage: 1000VDC
- ◆ Counting rate: 1KHz

#### DPBIT71

- ◆ 16-bit Up counter
- ◆ Input resistance: 12KΩ
- ◆ Input signal: 3~24VDC or 12~24VDC
- ◆ Max. counting: 65535
- ◆ Isolation voltage: 1000VDC
- ◆ Counting rate: 1KHz

**DPPC125**  
FASTlink Card



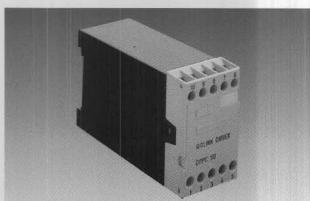
- ◆ Power supply: 24VDC/0.5A
- ◆ Max. modules: 256 points
- ◆ Dual port RAM interface: 2KByte

**DPPC130/135**  
BITlink RS232 Linker



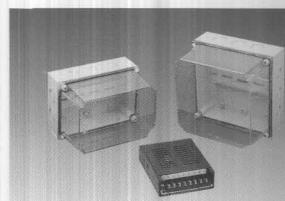
- ◆ Power supply: 24VDC/0.5A
- ◆ Max. modules: 256 points
- ◆ RS232 port: 9600BAUD 8-bit, even parity and 1 stop bit
- ◆ Protocol:  
DPPC130:  
IZUMI PLC standard  
DPPC135:  
ASCII-based command strings

**DPPC110**  
Standalone Power Supply



- ◆ Power supply: 110/220V, 50Hz
- ◆ Max. BITlink modules: 256 points

### Accessories

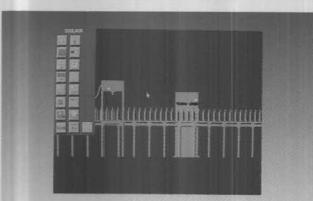


**BITPS36W**  
- Switching Power Supply  
◆ Power: 36W  
◆ Input: 90~264VAC  
◆ Output: 24VDC max. 1.5A

**BITBOX1**  
BOX125×175×125mm

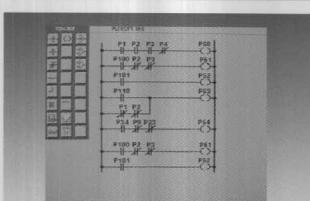
**BITBOX2**  
BOX175×175×125mm

**GRAPLC**  
Software Package



- ◆ Elements/page
- ◆ Unlimited amount of page
- ◆ Alarm files
- ◆ DOS calls
- ◆ Operated by keyboard or mouse
- ◆ Based on PCX files

**SOFTPLC**  
PLC Editor Program



- ◆ Industrial PLC alike
- ◆ Background PLC
- ◆ Download PLC
- ◆ Mouse or keyboard operated
- ◆ PC/AT based



MEASUREMENT & CONTROL

Headquarters:

**AXIOM TECHNOLOGY CO., LTD.**

3F. 14, Lane 235  
Pao Chiao Rd.,  
Hsin Tien Taiwan, R.O.C.  
TEL : 886-2-9174550  
FAX: 886-2-9173200  
INTERNET E-MAIL ADDRESS:  
axiom@tpts1.seed.net.tw

USA office:

**AXIOM TECHNOLOGY, INC.**

13791, Roswell Ave., Unit D  
Chino, CA91710  
Phone: (909) 4641881  
FAX : (909) 4641882

# **AX6350**

## **Low Cost Flat Panel Workstation**

### **General Description**

The new released AX6350 low cost flat panel workstation is made of heavy-gauge steel. The AX6350 contains either a LCD B/W display or a 640 × 400 EL display unit mounted to the front panel to provide the user with a built-in monitor. The sealed membrane keypad with extra large, widely spaced tactile feel keys for use by groved operators. A 300W power supply provides enough power for the 14-slot PC-bus compatible passive backplane. A removable drive bay for mounting one 5.25" and two 3.5" disk drives.

The display offers LCD B/W VGA resolution and compatibility to 640 × 400 lines with EL display. The EL display is lightweight, flat, electroluminescent matrix display designed for easy logic interfacing to most computer systems. It is based on a fully solid-state thin-film electroluminescent (EL) panel mounted with an elastic spacer to an electronic board. The board contains high-voltage driver and controller circuits with timing logic and waveform generators.

The AX6350 meets all the requirements as an IPC chassis. Designed in whole steel construction, it withstands shock, vibration, dust/dirt and a wide range of operating temperature found in factory floor environment. Besides, due to high capacity, the AX6350 is equipped with 300W high performance power supply to support enough electrical energy for the whole systems and has noise protection capability that meets EMI standard; and a push-pull cooling fan system to positively pressurize the internal chassis with filtered air for great cooling and better dust/dirt exclusion.



### **Features**

- 19 rack-mounted rugged, steel chassis
- LCD B/W or EL display
- Sealed membrane control and data entry keypads
- 14-slot PC/AT compatible passive backplane and 300W power supply
- Removable drive bay for mounting one 5.25" and two 3.5" disk drives
- Front panel meet MEMA 4/12
- Hold-down clamp to protect the plug-in card against vibration
- Dual cooling fans for pressured air cooling

# AX6350

## Low Cost Flat Panel Workstation

### Specifications

#### Display

##### LCD B/W Display

- **Max. Resolution:** 640 × 480
- **Package Dimensions:** 244 × 158 × 95mm (W×H×D)
- **Dot Size:** 0.24 × 0.24mm (W×H)

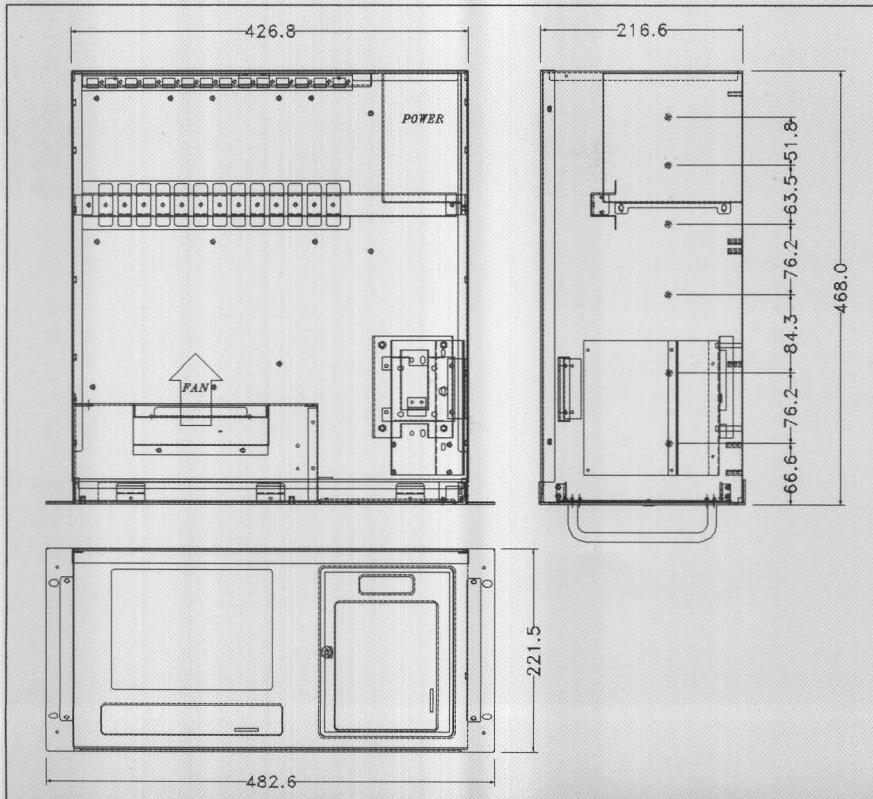
#### EL Display

- **Max. Resolution:** 640 × 400
- **Gray Scales:** 16 gray scale levels
- **Luminance Stability:** with time: change <20% in 10000h with temperature: change <10% over 0 to 55°C
- **Viewing Angle:** >140°

#### Power Requirements

- **Power Supply:** Maximum total 300W with cooling fan

### Outline Drawing



- **Output Voltages:**

- + 5DCV : 30A
- +12DCV : 12A
- 12DCV : 0.5A
- 5DCV : 0.5A

- **Input Voltages:** 90 to 130VAC, 180 to 270VAC
- **Input Frequency:** 47 to 63Hz
- **Inrush Current:** 60A max. at 115V  
100A max. at 230V full load
- **Safety Approval:** TUV, CSA, UL

#### Backplane

- 4-layer passive backplane with 14 AT expansion slots
- LED lights give a visual indication of all power supply voltages
- Front and rear keyboard jumpers available
- Passive AC termination for high speed signals

#### Chassis

- **Standard Color:** Gray texture

- **Construction:**

Heavy duty steel

- **Cooling:**

All standard chassis have two cooling fans

### Physical/Environmental

- **Dimensions:** (W × D × H)  
482.6 × 503 × 222.3mm
- **Weight:** 15Kg
- **Operating Temperature Range:** 0 to +40°C (LCD B/W display)  
0 to +55°C (EL display)
- **Storage Temperature Range:** -10 to +70°C
- **Relative Humidity:** 10% to 85%, non-condensing

### Ordering Guide

- **AX6350A**

Low Cost Flat Panel Workstation  
Note: LCD B/W Display, 14-slot Passive Backplane, 300W Power Supply, 3.5" 1.44MB FDD, Display Card Installed, W/O CPU Card

- **AX6350B**

Low Cost Flat Panel Workstation  
Note: EL Display, 14-slot Passive Backplane, 300W Power Supply, 3.5" 1.44MB FDD, Display Card Installed, W/O CPU Card